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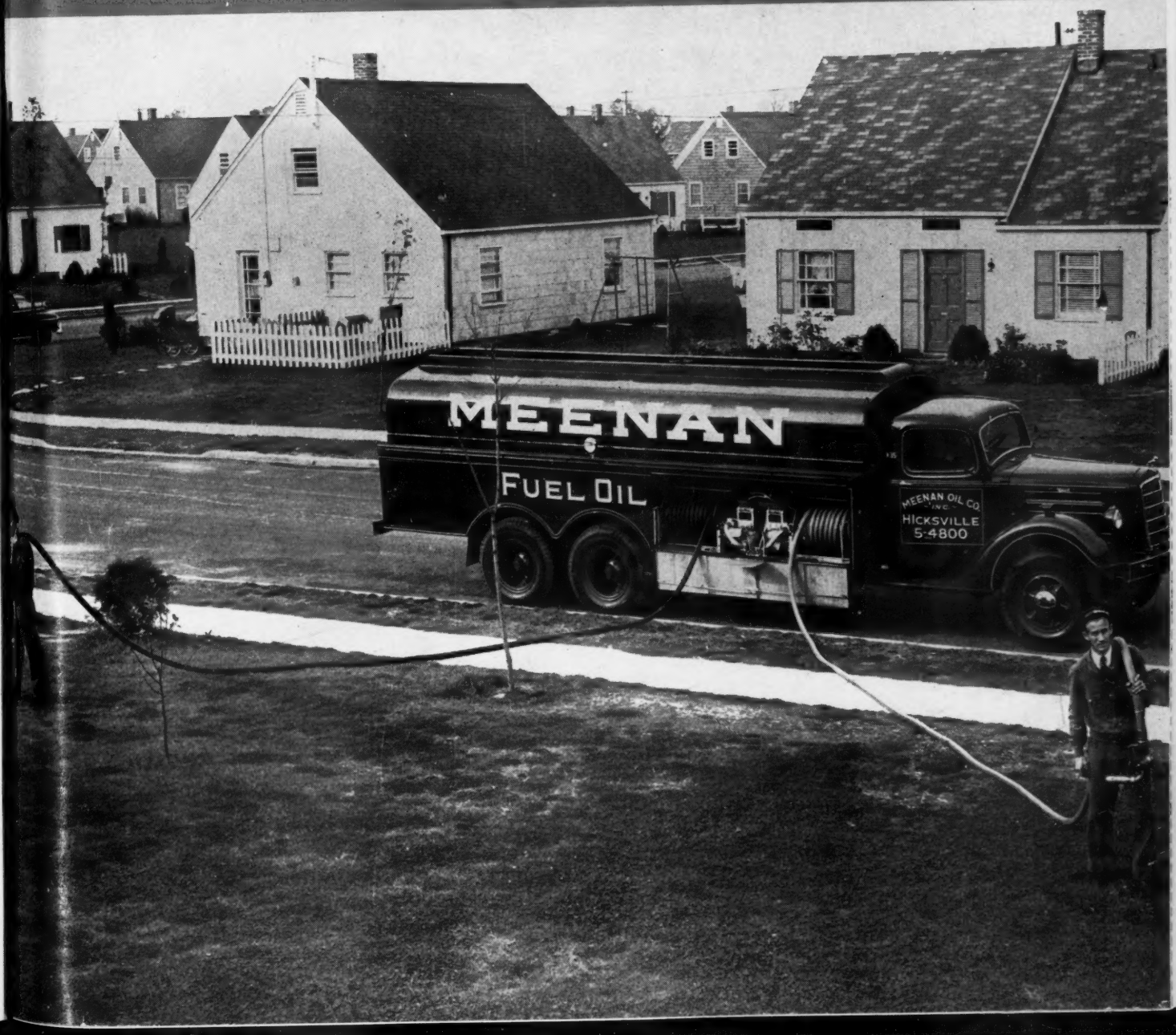
fueloil & oil heat



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VOL. 9, NO. 2

fueloil & oil heat

FEBRUARY 1950

Names in the News

E. F. (Ed) Groves resigned as general sales manager of the Petroleum Heat & Power Company, Stamford, Conn., effective January 31, to join the sales force of Automatic Burner Corp., Chicago. He has been with Petro since 1937. Mr. Groves joined the sales force of ABC's Detroit branch in May 1929, when Joseph Hearst, now ABC president, was branch manager. He became manager of the Detroit branch the following year, later working as a field representative and with a dealer. He left ABC to join Petro in 1937.

George H. LaRoi and *James A. Solon* have been elected vice-president and treasurer, respectively, McDonnell & Miller, Inc., Chicago, Ill. For a number of years both men have played important roles in the growth of the organization.

Thomas J. Affleck, Jr. has been appointed manager of the Rochester Region, Delco Appliance Div., General Motors Corp., Rochester, N. Y., succeeding the late Charles E. Smith. He will have charge of sales and service of the complete line, including Delco-Heat equipment in western New York, western Pennsylvania, Ohio and part of West Virginia. He joined Delco Appliance in 1936 and has been located in the Detroit and Rochester areas. He enlisted in 1941 for five years of service in the Army Air Corps.

Clarence L. Randall, Passaic, N. J., recently became factory representative for the metropolitan New York area for

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DEPARTMENTS

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Marlow Type SC

For high capacity and high efficiency in pumping light liquids on flooded suction installations. Close and long-coupled models, sizes 1 to 4 inches, capacities 10 to 1000 GPM. Features include an easily renewable sealing ring at impeller inlet, deep-groove oversize ball bearings, and a John Crane dripless shaft seal. Motors from ½ to 30 HP. Explosion proof or fully enclosed.

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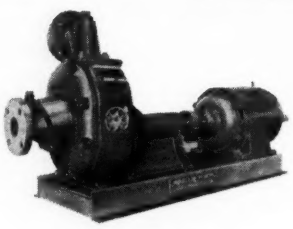

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Models also available for belt and engine drive and for high pressure service.

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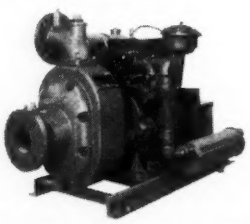
NOW — a *quiet*, dependable centrifugal tank truck pump that couples direct to power take-off. Installs like a rotary but has a centrifugal's smooth efficiency, high capacity and *long life*. Sizes 2 and 3 inch. Capacities 20 to 200 GPM.



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Marlow Self-Priming Centrifugals for refueling or transfer, where mobility or stand-by operation is required. Sizes 1½ to 8 inches. Capacities 15 to 2000 GPM. 2- and 3-inch sizes available with electric starter and spark arresting muffler for tank truck service.

Wherever pump users gather you will hear the name MARLOW used as a standard of pump efficiency, trouble-freedom and long life. It will pay you, too, to standardize on the standard.

Write the Marlow factory for complete information and the name of the Marlow dealer nearest you.

MARLOW PUMPS

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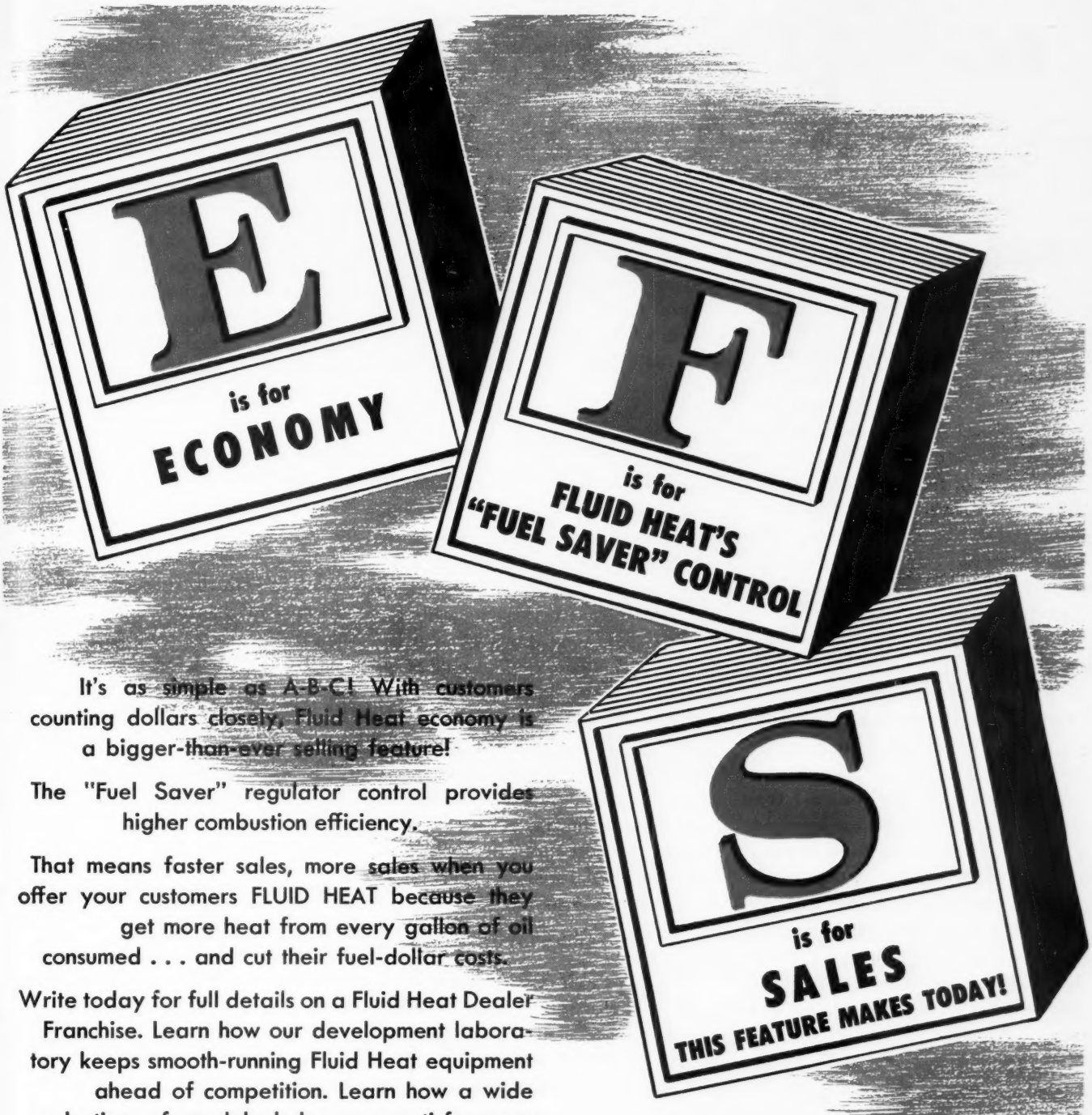
MANUFACTURERS OF QUALITY PUMPS SINCE 1924

York-Shipley, Inc., York, Pa., covering the products of the Residential Heating Equipment Div. He has had outstanding experience in automatic heating for thirty years, covering both retail and wholesale operations. An enthusiast for on-the-job application of the latest advancements in heating and combustion, Mr. Randall is one of the charter members of Combustion Institute and will welcome word from men who pioneered with him in the Institute.

J. W. Shrank, for the past four years in charge of repair parts, Perfection Stove Co., Cleveland 4, Ohio, has been transferred to the company's Michigan sales territory, to handle Superfex furnaces in eastern Michigan and Lucas County, Ohio. His headquarters will be in Detroit, the city in which he first worked for Perfection in 1928. For a number of years Mr. Shrank was with the company's range and heater sales division in Detroit, New York, Boston and Jersey City. During the war years he was an expediter of war material at the Cleveland main plant.

R. Wendell Franks, Long Beach, Michigan City, Ind., has become factory representative for American Clay Forming Co., Tiffin, Ohio, whose line includes refractory combustion chambers for domestic oilburners. Mr. Franks also represents Skuttle Mfg. Co., Detroit and R. E. Michel Co., Baltimore, and will travel the same territory—northern Indiana, northern Illinois, eastern Wisconsin and upper Michigan—for American Clay Forming Co. Mr. Franks' background includes associations with Utah Gas & Coke Co. and with a firm of combustion engineers in Utah and Montana. During the War he served as Industrial Hygiene and Safety Officer for the Chemical Warfare Service.



It's as simple as A-B-C! With customers counting dollars closely, Fluid Heat economy is a bigger-than-ever selling feature!

The "Fuel Saver" regulator control provides higher combustion efficiency.

That means faster sales, more sales when you offer your customers FLUID HEAT because they get more heat from every gallon of oil consumed . . . and cut their fuel-dollar costs.

Write today for full details on a Fluid Heat Dealer Franchise. Learn how our development laboratory keeps smooth-running Fluid Heat equipment ahead of competition. Learn how a wide selection of models helps you satisfy more people, make more sales!

FLUID HEAT OIL BURNER DIVISION,
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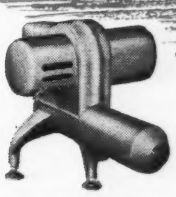
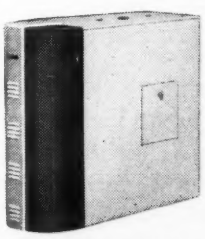
ROTARY BURNERS



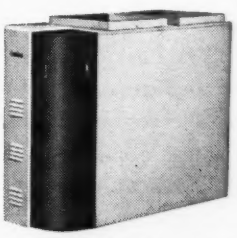
PRESSURE BURNERS

fluid heat
OIL BURNER
"WORLD'S ECONOMY CHAMPION"

Manufactured by Anchor Post Products, Inc.
Baltimore 24, Md. Established 1892

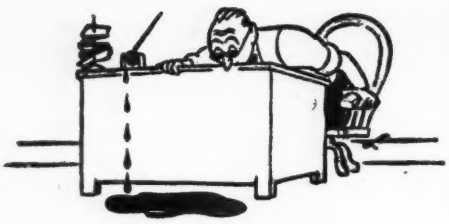


BOILER BURNER UNITS



AIR-CONDITIONING FURNACES

fueloil & oil heat



Editorial Leaks

Coal has a rosy outlook for the long run future, but a realistic estimate of the industry's position in the next "several decades" is not so good, according to Reed Moyer of the Central Indiana Coal Company, speaking before the Indiana Section of the American Chemical Society. Neither a 3,000 year coal supply nor wishful thinking about dwindling oil reserves guarantees the triumph of the coal industry over its oil and gas competitors, he said.

Mr. Moyer predicts oil and gas will continue as coal's rivals for at least a generation, and urged the industry to undertake greatly expanded research to protect its interests. He pointed out that synthesis of oil from coal, if and when it comes, probably will use coal from captive mines, and not be too helpful to the coal industry as we know it today. The vast amounts of money required for synthetic plants seems to bar the average small coal company from participation in this coal use, he believes. A synthetic oil plant probably would own its own mines as the steel industry does today.

A warning against too much reliance on dwindling oil and gas reserves was voiced also by Mr. Moyer. "A recent National Coal Association table estimating proven U. S. crude oil reserves shows that in 1937 we had a 10 years' supply of oil," he said. "This same table indicates that in 1947 we had a 12 years' supply of oil. Virtually the same situation exists in natural gas reserves and production. It is apparent that what is being depleted are only our proven reserves of oil and gas. There is valid evidence of the existence of abundant undiscovered reserves, and it is these with which we must reckon in the future."

Heating is not an important part of coal use, demanding only about 18% of coal production even in the best years. Industrial uses—utilities, railroads, and steam raising—were the uses that kept the coal industry prosperous. These are fuel uses shifting to oil and gas that bite the coal industry hardest. It is said the coal industry, including the miners' unions, would trade the entire heating load to oil in return for the railroad demand that has gone diesel. Utilities that formerly generated electricity by coal now turn their surplus natural gas under boilers in times of slack gas demand. Natural gas may reach the consumer by pipe in winter and by wire in summer. The coal industry loses market in both seasons.

◈

The plight of the coal industry could be eased somewhat by more realistic policies on the part of its miners' unions. Publicity during the recent coal strike has been generously salted with ridicule for seemingly unreasonable attitudes. John L. Lewis' three-day work week became a no-day work week in spite of his pleas to the men—sincere or not—to return to work.

Middlewestern newspapers during the last month carried stories of a miner who was expelled from his local because he installed gas heating in his new home. Further publicity was given the case when the national union upheld the right of the local to expel the man from the union—and from all hope of working at his trade.

While this case was being aired the news broke that three of four buildings owned by the United Mine Workers in Washington were burning oil, and a fifth and smaller building is heated by gas radiators. Only one of the office buildings is heated with coal.

These news stories in themselves have no bearing on the value of coal as a fuel, but capriciousness on the part of people responsible for producing coal leaves the customers with a cold, sinking feeling in the pit of the stomach.

◈

Announcement by the Laclede Gas Light Company, St. Louis, that it will permit installations of gasheating equipment after March 15, reminds us that all is not always serene in the land of cheap natural gas. The last time the company let down the bars on gasheating installations on April 28, 1949, there followed a flood of cases to the St. Louis Better Business Bureau.

More than 30,000 applications for gasheating are reported in the five months after restrictions were lifted, and the Better Business Bureau heard from 1300 of these applicants.

More than 56% of these 1300 calls on the Better Business Bureau were inquiries regarding the reliability of the heating contractor or the product, and to get assurance that sufficient gas would be available to carry the load. Little less than 44% were complaints.

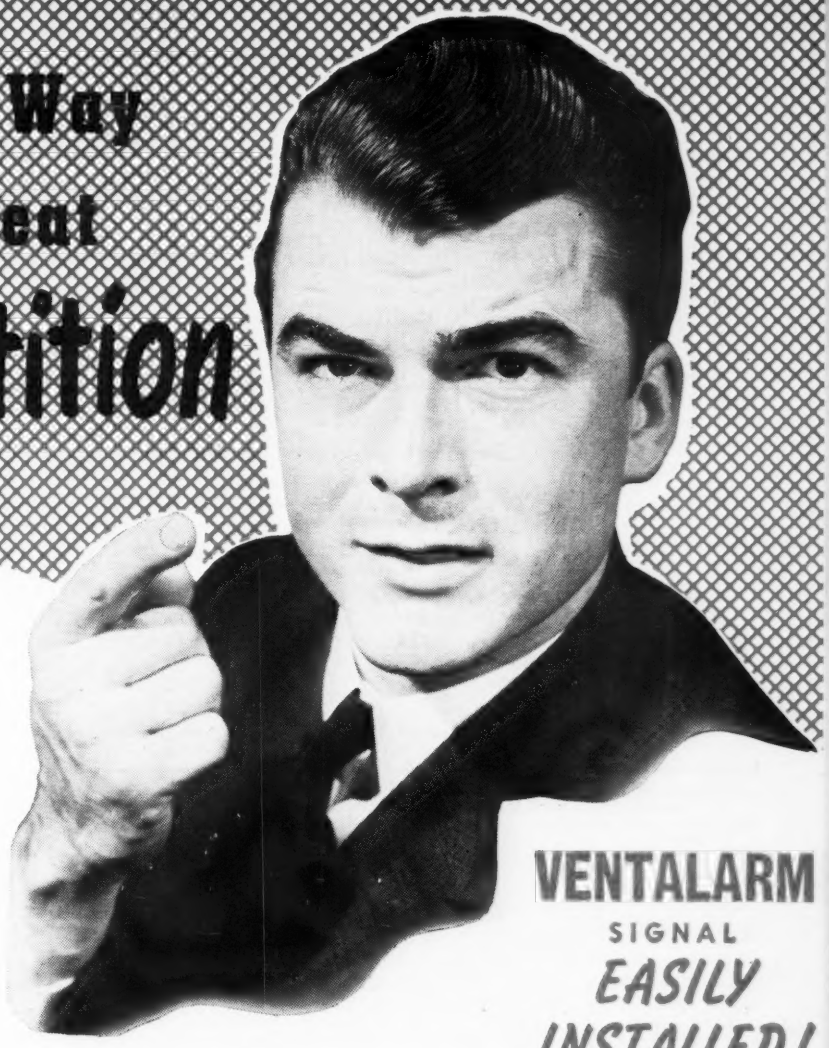
It seems that the announcement of abundant gas attracted a flood of old and new firms to share the bonanza. Some were responsible firms with no gasheating experience and others were simply irresponsible. Salesmen and others connected with the gasheating business "disaffiliated" themselves to set up new companies and some established sharpies rushed in to get their share of the killing. Results in some cases were rather sad, ranging from honest errors in installation to outright fraud.

Chief among the complaints was the practice of selling and delivering a piece of gasburning equipment, following which the customer had trouble getting the equipment installed. Some of the trouble arose from the utility's rule that the customer must make his application himself. Dealers, claiming an "in" with the company, offered to "take care of" the application for a quick order. The result was a hung-up installation until the proper procedure was followed. One furnace company, well known for the practice, began tearing down furnaces on inspection and refusing to reassemble them on the claim that they were unsafe.

Another enterprising gent thought a lot of stokers would be replaced, and through classified ads he picked up an unspecified number described as "dozens" at $25 to $50 each. The former stoker owners had difficulty getting their money.

Admittedly, none of these evils that attend a gasheating boom reflect on the cost or efficiency of gas heat, or the satisfaction it may deliver. Oilheating dealers, eyeing the gasheating possibilities in their towns, might like to know the company they are going to keep.

Here's an Easy Way to Meet and Beat Gas Competition



Gas competition claims that the delivery of gas to the home is superior to the delivery of oil because it is less bothersome... more automatic.

THE ONE BEST WAY to meet and beat this claim is to install VENTALARM Whistling Tank Fill Signals on your customers' tanks.

Only then can you claim that oil delivery does not disturb the household in any way . . . that you can make safe, sure deliveries with never a need to enter a home.

And you can "kill two birds with one stone" because VENTALARM Signals create new delivery savings for you. Think of this . . . all costs are repaid in the first five deliveries to a new installation or during the first heating season on an old installation. From then on, savings up to 30% of delivery costs are clear.

15 Major and over 3500 Independent Oil Companies are meeting gas competition and building more profitable heating seasons with VENTALARM Signals. Can you afford to wait any longer?

40 models for new and old tanks available through your regular Supply House. Address inquiries to:

SCULLY SIGNAL COMPANY
79 First Street, Cambridge 41, Mass.

VENTALARM®
WHISTLING TANK FILL SIGNAL

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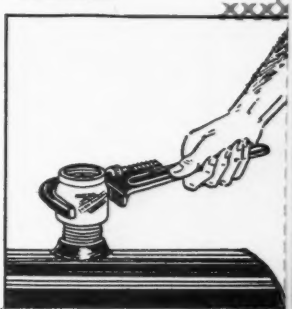
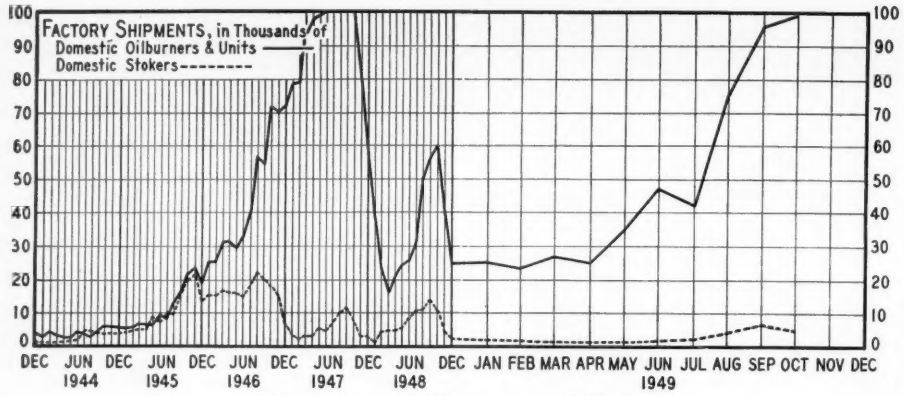
Canadian Licensee, EMPIRE BRASS MFG. CO., LTD., London, Ontario

VENTALARM SIGNAL EASILY INSTALLED!

The LC model VENTALARM signal is easily installed on old tanks. A quick compression fitting with bayonette lock eliminates any pipe threading. Takes only 15 to 20 minutes.



The LA model VENTALARM signal is installed on tank when new burner is being put in. Threaded top receives threaded vent pipe in usual manner. No extra time required.

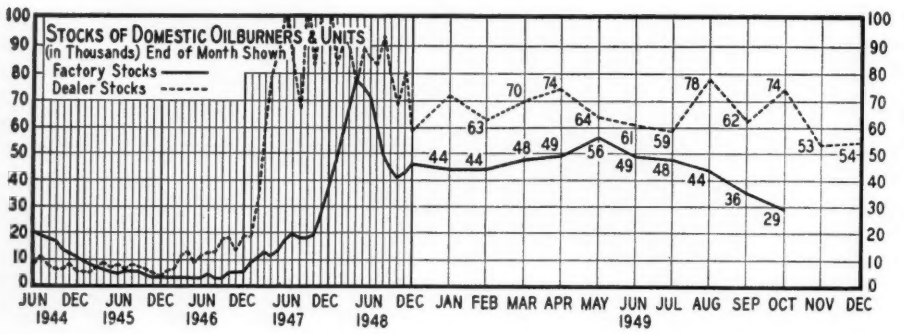

FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
DEC JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1944 1945 1946 1947 1948 1949

Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than the 152 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	OCTOBER			TEN MONTHS		
	1949	1948	Percent Change	1949	1948	Percent Change
Conversion	75,629	44,090	+ 71.5	379,370	241,471	+ 57.1
Boiler units	8,440	5,534	+ 52.5	44,694	32,345	+ 38.2
Furnace units	15,289	10,343	+ 47.8	78,718	73,047	+ 7.8
All Domestice	99,358	59,967	+ 65.7	502,782	346,863	+ 45.0
Commercial	2,707	2,507	+ 8.0	21,185	23,887	— 11.3
Total	102,065	62,474	+ 63.4	523,967	370,750	+ 41.3

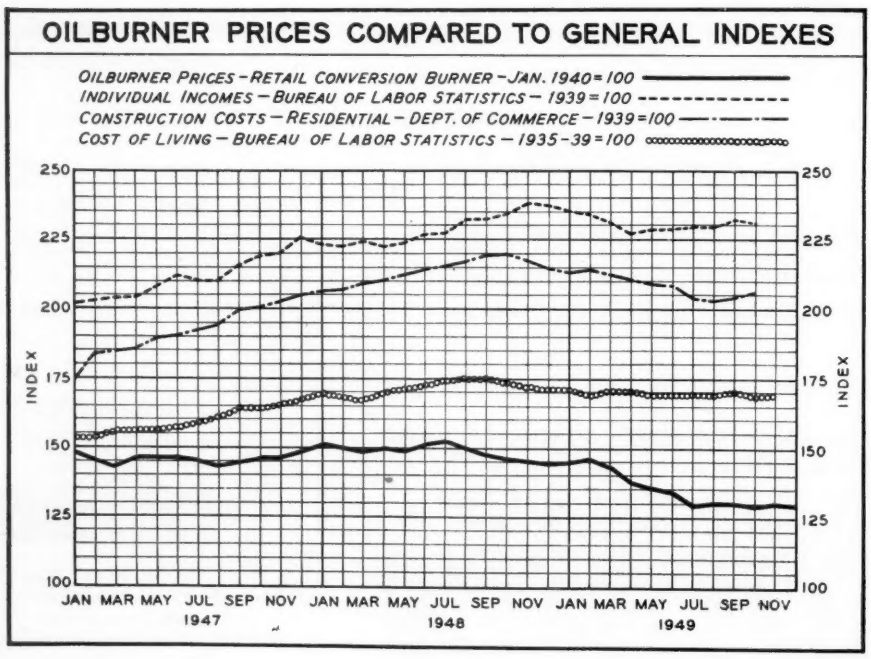

STOCKS OF DOMESTIC OILBURNERS & UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1944 1945 1946 1947 1948 1949

December Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE-BURNERS
December Aver.	$313	$666	$564
November Aver.	314	662	574

Price Index: Conversion Burners: January 1940 is 100%

	WHOLESALE				RETAIL			
December	128.2	Six months ago	129.5	December	129.4	Six months ago	134.1
November	128.2	Year ago	141.6	November	130.0	Year ago	144.4


OILBURNER PRICES COMPARED TO GENERAL INDEXES
OILBURNER PRICES - RETAIL CONVERSION BURNER - JAN. 1940 = 100
INDIVIDUAL INCOMES - BUREAU OF LABOR STATISTICS - 1939 = 100
CONSTRUCTION COSTS - RESIDENTIAL - DEPT. OF COMMERCE - 1939 = 100
COST OF LIVING - BUREAU OF LABOR STATISTICS - 1935-39 = 100
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1947 1948 1949

Oilheating Trends

DECEMBER INSTALLATIONS of domestic oilburners and units are estimated at 32,877, virtually the same as in December of the previous year. The total estimated installations for the full year 1949 based on the addition of the twelve monthly estimates is 569,805. This is very close to the annual figure of 570,593 shown in the January Yearbook issue of FUELOIL & OIL HEAT, which had been based on the broad industry study made each year in December.

December installations were divided: New homes 10,718; Replacements of old oilburners 5,622; Conversions from other fuels 16,537. The division along these lines for the full year should be based on an annual study for the January issue rather than on the addition of the twelve monthly estimates. The annual study covers many more dealers than the monthly ones, and the principal difference between the two is the number of oilburner installations that replaced old oilburners. The annual study shows considerably fewer replacements than the monthly studies for the apparent reason that the monthly reporting group represents more vigorous merchandisers than the industry as a whole.

For the benefit of those who do not have the January issue figures at hand the 1949 total installations estimated at 570,593 were divided: New homes 172,320; Replacements of old oilburners 58,200; Conversions from other fuels 340,073. The net increase for the year the number of fueloil users was 474,143, since there were losses to other fuels of 38,250.

BURNER STOCKS: Dealer stocks of domestic oilburners and units at the end of December are estimated at 54,478, a slight rise from 53,263 at the end of November. Factory stocks at the end of October, the latest available information, were 29,205, which is the lowest point reached since November 1947, indicating that the demand from dealers for burners was greater in October than anticipated. The low stock position may also have been influenced by the steel strike.

BURNER SWAPPINGS: Because in the last issue there had been a measurement of the exchange of pot-type burners and pressure burners during replacement ac-

tivities, a couple of the cooperating dealers had requested that we run a question this month to measure the exchanges between vertical rotary and gun burners. The result of the survey was almost a standoff. Approximately 10,772 rotary burners were installed in 1949 to replace gun burners while an estimated 11,133 gun burners replaced rotaries. This shows gun burners having a little the better of it but there could be a margin of error in the sample large enough to offset this. The only significant disclosure in these figures is that more than a fourth of all rotary burner installations were sold to replace a gun burner while less than 3% of total gun burner sales were made to displace rotaries.

AIR HANDLING DEVICES: In 1949, approximately 3,453 old oilburners were remodeled or improved by adding a new burner head such as Shell, Monarch, Richfield, Sanborn or Airflame. The charge for installing these heads ranged all the way from $12.50 up to $125, showing the range of imagination sales departments can exercise. The weighted average price among those reporting was $42.45.

The new type of combustion heads stimulated replacement sales of burners to a small degree. It appears that about 3,092 replacement sales were made where the sales appeal was based on improved efficiency to be expected from a new burner with this type of combustion head. From these various figures it is apparent that the principal application of these special combustion heads is in the field of new oilburner design at the factories, rather than any important emphasis being given to replacements.

TRUCK MAINTENANCE COST: Another dealer request had been for a check on this factor through the reporting group. Apparently, the question asked of these dealers did not go into sufficient detail on what items were to be included in the term "maintenance." First, the answers were requested on the basis of maintenance costs per mile. The answers here proved of little value because of the diversity in truck sizes, while there was not enough coverage of each individual truck size to make a separation. For that reason the answers on a mileage basis are not being published.

It was interesting to get a check on the sizes of fueloil delivery trucks in use by the reporting group. Only 3% are of less than 1,000 gallon size; 21% are 1,000 to 1,499 gallons; 69% are from 1,500 to 2,499 gallons; 7% are 2,500 and upward.

This cost of maintenance check had also been requested on a basis of gallonage delivered. With the averages weighted over the entire group, we have a figure of .44¢ per gallon. There was a wide diversity in this, ranging from a low of .07¢ to a high of .56¢ so it is obvious that everyone did not use the same items in their thinking. The companies reporting the highest figures must have included all items of truck costs other than driver labor, since you could

(Continued on page 127)

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
December		12 MONTHS			December		12 MONTHS	
1949	1948	1949	1948		1949	1948	1949	1948
100	..	698	..	Albany, N. Y.	..	..	..	..
547	823	6173	2720	Baltimore, Md.	183	42	2885	5761
..	..	..	..	Binghamton, N. Y.	3	3	106	141
..	..	..	..	Bloomfield, N. J.	2	10	81	97
..	..	..	..	Boston, Mass.	23	9	348	297
92	140	1065	1051	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, N. Y.	27	16	431	327
..	..	..	..	Des Moines, Ia.	44	29	1213	905
92	916	6011	..	Detroit, Mich.	895	221	12064	6645
61	55	597	447	Elizabeth, N. J.	2	0	54	21
35	21	379	..	Freeport, N. Y.	..	..	..	..
..	..	..	..	Greenwich, Conn.	30	13	240	270
..	..	..	..	Hackensack, N. J.	2	0	56	42
101	97	1066	1373	Hartford, Conn.	..	..	..	..
..	..	..	..	Hudson County, N. J.	..	..	..	..
23	4	340	188	Irvington, N. J.	0	0	25	47
..	..	..	..	Lynn, Mass.	8	22	204	181
114	23	448	..	Meriden, Conn.	..	..	..	..
265	188	3769	2136	Milwaukee, Wisc.	209	164	2324	1862
122	141	1216	1316	Minneapolis, Minn.	155	48	1898	1320
10	19	261	229	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	..	..	..	..
27	21	447	266	Mt. Vernon, N. Y.	..	..	..	..
..	..	..	..	Newark, N. J.	..	..	..	..
34	94	689	845	New Bedford, Mass.	..	..	..	..
62	35	763	..	New Haven, Conn.	..	..	..	..
..	0	..	0	New Orleans, La.	..	..	..	..
14	5	322	139	New Rochelle, N. Y.	12	8	60	106
..	..	..	..	New York City (total)	..	..	..	..
1983	..	..	..	Brooklyn-Queens	..	..	..	..
..	416	..	4471	Manhattan, Bronx, Rchd	..	..	..	..
147	95	1947	1331	Norfolk, Va.	85	35	841	585
..	0	..	11	Oakland, Calif.	..	..	..	..
53	207	1628	1151	Omaha, Neb.	46	104	716	745
6	5	206	163	Orange, N. J.	2	10	9	25
17	4	318	239	Passaic, N. J.	..	..	..	..
43	17	768	519	Paterson, N. J.	11	5	123	107
944	429	10731	6305	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	7	5	142	97
24	30	402	376	Portland, Me.	10	9	138	153
284	294	6226	5024	Portland, Ore.	339	102	2209	..
15	16	265	207	Poughkeepsie, N. Y.	..	..	..	..
50	51	674	620	Providence, R. I.	12	4	185	179
..	..	..	..	Reading, Pa.	3	0	65	40
108	119	1079	839	Richmond, Va.	41	26	676	873
125	94	2426	1620	Rochester, N. Y.	..	..	..	..
16	26	281	330	Rockville Center, N. Y.	6	3	114	200
38	34	376	279	Salem, Mass.	3	7	94	120
..	76	..	1631	St. Louis, Mo.	43	28	598	476
114	179	2157	1632	St. Paul, Minn.	71	15	834	..
81	50	567	737	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Wash.	153	103	1690	..
..	..	..	..	Springfield, Mass.	71	20	562	..
69	29	575	447	Stamford, Conn.	..	..	..	..
30	..	668	..	Syracuse, N. Y.	27	..	355	..
..	..	..	..	Trenton, N. J.	2	0	70	31
..	..	..	..	Utica, N. Y.	1	4	85	132
126	212	1426	1791	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	6	5	189	150
20	17	279	227	White Plains, N. Y.	..	10	..	79
47	..	1139	..	Wilmington, Del.	1	18	103	128
123	..	1629	..	Worcester, Mass.	..	..	..	..
38	31	655	322	Yonkers, N. Y.	..	..	..	..
3917	4521	48931	34869	*Totals*	2508	1088	26137	22063
—13.4		+40.3		*Percent Change*	+130.5		+18.5	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

21 Smart ideas

ONLY FORD GIVES YOU A CHOICE OF V-8 OR SIX

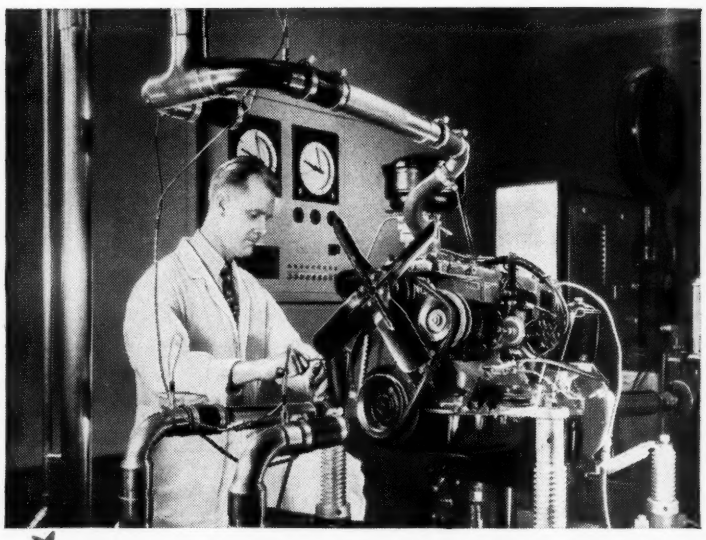
The Ford Truck line for 1950 gives you new models, new ratings, new power, new features—21 smart ideas in all, to help cut trucking costs.

NEW MODELS like the F-3 Parcel Delivery, which expand the 1950 Ford Truck line to over 175 models. This wide selection means that you should see your Ford dealer for the right truck for you, no matter what you haul. New G.V.W. rating increase on Series F-6 and F-8.

NEW POWER like the brand-new 6-cylinder Rouge 254 truck engine. Thus, for 1950 you have a choice of four great engines, two Sixes, and the only two V-8's in trucking. Only Ford gives you a choice of V-8 or Six.

NEW FEATURES like the full air brakes now available on the 1950 F-8 Big Jobs . . . single-speed axles for the F-6 and F-8 . . . new Synchro-Silent transmissions . . . new features that make driving safer and easier.

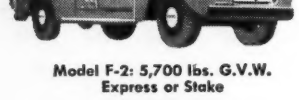
New models! New ratings! New power! New features! You'll find all these smart ideas in Ford Trucks for 1950. And you'll find the smartest idea of them all . . . Bonus Built construction which means big reserves of strength and power. That's why a 1950 Ford Truck is the smart buy for you. Your Ford Dealer can arrange quick delivery on most models. See him today!



NEW 110-HORSEPOWER SIX! The new Rouge 254 makes the 1950 Ford F-6 the most powerful 6-cylinder Ford Truck ever built. The thoroughly proved 254 has Free-Turn exhaust valves, Autothermic pistons, chrome-plated top piston ring, High-Lift camshaft, and many other power-producing, cost-saving, smart ideas. A brand-new, 4-speed Synchro-Silent transmission engineered for quiet operation, easy shifting and long life is standard with the new 254 engine.

Model F-2: 5,700 lbs. G.V.W. Express or Stake

Model F-1; 4,700 lbs. G.V.W. Panel, Pickup or Stake



Model F-3; 6,800 lbs. G.V.W. Express or Stake

Model F-5; 14,000 lbs. G.V.W. Wheelbases; 134, 158 and 176 in.

Model F-4; 10,000 lbs. G.V.W. with Duals

Model F-3 Parcel Delivery Wheelbases; 104 and 122 in.

America's No. 1 Truck Value!

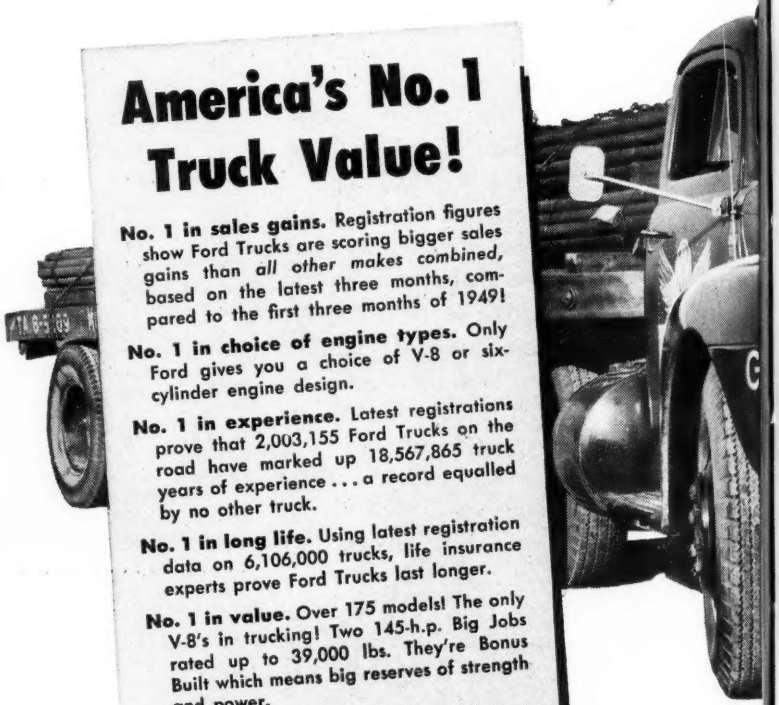
No. 1 in sales gains. Registration figures show Ford Trucks are scoring bigger sales gains than *all other makes* combined, based on the latest three months, compared to the first three months of 1949!

No. 1 in choice of engine types. Only Ford gives you a choice of V-8 or six-cylinder engine design.

No. 1 in experience. Latest registrations prove that 2,003,155 Ford Trucks on the road have marked up 18,567,865 truck years of experience . . . a record equalled by no other truck.

No. 1 in long life. Using latest registration data on 6,106,000 trucks, life insurance experts prove Ford Trucks last longer.

No. 1 in value. Over 175 models! The only V-8's in trucking! Two 145-h.p. Big Jobs rated up to 39,000 lbs. They're Bonus Built which means big reserves of strength and power.



Ford Trucks Cost Less Because—

Natural Gas...Problem or Panacea?

As Promoters Push Lines East, Who Will Be Benefited?

by
Joseph B. Wells*

THE PRESENT PROMOTION of three of the dominant natural gas pipeline corporations to establish and expand the use of this fuel in the Middle Atlantic and New England states raises serious questions of national economic policies, national defense policies and sectional industrial issues. These questions are new. The issues did not exist so long as this limited and exhaustible natural resource was being drawn upon for the benefit of the areas from which it comes. The exodus of natural gas from these adjacent markets, however, through the current concerted drive to launch an invasion of both the domestic and industrial markets of Central and North Atlantic areas, compels consideration of this fuel from new viewpoints.

The Atlantic Seaboard areas on which natural gas is now concentrating its promotion and propaganda represent a vital and dominant market to the producer of fueloils. Fifty-eight per cent of domestic furnace oils, fifty per cent of kerosene and forty-five per cent of the residuals refined east of the Rocky Mountains are consumed within the two eastern areas involved. On the demand from these areas, refineries are heavily dependent for the ratios of product consumption which provide today's balance of refinery production.

The cornerstone of the economy of petroleum refining rests upon yields from a barrel of crude that range from 40% to 42% for gasoline; 21% to 23% for residuals; 17% to 19% for distillates and 5% to 7% for kerosene. Serious disturbance of these ratios must ultimately lead to disturbance of refinery economics and this, in turn, must inevitably lead to disturbance of product costs and product pricing. Obviously, any sizable diversion of the consumption of fueloils, either domestic or industrial, in such a dominant and controlling area of consumption as that involved in today's promotional plans for natural gas represents a far-reaching and serious threat to the maintenance of required product ratios at the refinery. Between the physical problems involved in the readjustment of yields for nearly one-half of refinery production and the potential possibility of economically unsound lower selling prices, the refineries could face an almost unsolvable production and economic dilemma.

Certain it is that refinery income sacrificed because of enforced defensive lower pricing on fueloils must obviously be recovered through higher prices on other refinery products.

"Uneconomically Low Prices"

How can any section . . . or the nation at large . . . logically anticipate any permanent or true economic gain or advantage from uneconomically low prices on either natural gas or fueloils if it must then pay more for its gasoline, its lubricating oils or other petroleum products which it consumes?

If natural gas represented some new revolutionary or fundamental form of energy, the readjustments and disturbances which its ambitious promotion presages might constitute a basic factor in national progress. But natural gas is not a revolutionary development, nor is it a new, constructive, creative force. Natural gas is but another form of fuel . . . an alternate form of natural energy . . . now seeking to gain itself new markets through large-scale replacement of the established oil-burning economy in the dominant oilheating area of the nation.

Viewed from this realistic approach, it becomes a sober question of national economic policy whether the advantages of natural gas to its few promoters, to a group of security and stock underwriters and to steel-pipe producers should be permitted to overshadow the economics of the basic industry of petroleum production, refining and marketing with its tremendous capital investment, its legion of employed workers, its multitude of small business men and its dependable, organized and functioning procedure.

Nor are national issues limited to this consideration. The serious and critical issue of national defense policies is also involved.

This is reflected in the enormous quantities of natural gas for which transmission lines are seeking permits. These quantities provide us with a responsible interpretation of the ambitious objective toward which natural gas promotion is aimed.

For New England, as an example, petitions already made to the Federal Power Commission ask for the right to bring in a total of more than 500,000,000 cu. ft. daily. One leading transmission company alone, together with a subsidiary, is petitioning in the name of "public necessity and convenience" to be allowed to import 350,000,000 cu. ft. daily by 1956. On a thermal unit basis this quantity would represent a natural gas supply of more than three and one-half times any historical consumption in this area. Added to existing production facilities for manufactured gas, the total would represent more than four and one-half times present New England consumption.

It is obvious from such a proposed surplus supply that great expansion in both domestic markets and industrial markets is contemplated.

Let us view this program for placing natural gas in such a dominant position throughout the Middle Atlantic and New England states from the standpoint of sound national defense policies.

Given the hoped-for natural gas

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achievement of every eastern seaboard community dependent for its comforts and facilities in the home and for a commanding part of its power for industry on a few 26 to 30 inch steel pipes coming some 2,000 miles from faraway Southwest Texas, what would happen if those pipe-lines failed?

It could be through sabotage; it could be through a block buster; it could be through an atomic bomb, or it could be because of an act of nature. All would add up to the same. Supply would be cut off. What then would happen?

Contrast the possibilities of such a debacle with the present distributive system of energy represented by fueloil and coal . . . communities and industrial plants supplied locally from a multitude of oil storage tanks and coal bunkers . . . which, in turn, receive their supply from hundreds of individual tankers, transport trucks and raliway trains.

Which plan and procedure presents the soundest risk and the greater safety-first policy in so far as the protection of a dependable supply of energy is concerned and reduces to the minimum the risks involved in facing possible failure of a vital energy supply with its fearful consequences?

Effect on Transportation Industry

There are more far-reaching and critical issues than the two that have been discussed. The impact of the substitution of energy in the form of natural gas for that of petroleum would find serious reflection throughout the transportation industries that serve in the distribution of petroleum products. It would affect the automotive industry and many phases of the metal fabricating industries that supply trucks, tanks and materials. It would react on the oil-burner industry and the allied industries from which it purchases. It would affect employment, state taxes and excise fees, deplete plant investments of utility companies and react on an army of local business organizations that supply petroleum distributors, from terminal operator to tank wagon retailer, with everything from office supplies and maintenance materials to insurance and rental properties.

All these considerations enter the natural gas picture now that it begins its drive toward wide replacement of fuel-oils in their dominant historical markets. Natural gas, from a social and economic viewpoint cannot logically be divorced from the full significance of its promotion, nor can it properly be permitted to assume an isolated position from which it preaches panacea with no consideration for the problems it precipitates.

The propaganda that precedes natural gas promotion depends heavily upon the development of a public concept that natural gas is sensationally low in cost. What are the realities in regard to this claimed economic advantage?

These realities are being closely scrutinized in New England in an honest effort to separate enthusiastic salesmanship from the basic facts. It seems probable that the analysis being made here is beginning to reveal some realities that would apply equally to other areas.

This analysis began with a minute examination of the largest and most dominant gas consuming market in the region . . . Metropolitan Boston. Here the thermal content of manufactured gas ranged around the typical 530 B.T.U. per cubic foot and here was to be found gas rates that were among the lowest in New England.

Into this market, natural gas seeks to bring its product containing around 1,000 B.T.U. But this 1,000 B.T.U. gas is not to be available to consumers, however. Heavy plant investment in present gas manufacturing facilities and the problems involved in pressure and capacity of mains, together with the requirement of the expenditure of something like $25,000,000 expense in adjusting domestic equipment for some 1,700,000 metered outlets for a gas of high B.T.U. content seem to indicate that a mixed-gas with a maximum of 650 B.T.U. per cubic foot would be the probable product.

On this basis . . . a mixed-gas of 25% natural content and 75% manufactured gas . . . a comparative cost was computed with furnace oil at a 12¢ per gallon level and residual oil at around $2.15 per barrel. The resulting figures failed completely to reflect the propagandized economies of natural gas for New England.

#2 Furnace Oil at 12¢ costs the domestic user approximately 12¢ per usable therm. A 25% natural and 75% manufactured gas with a 650 B.T.U. rating would cost in excess of 15¢, or 25% more.

#6 Residual Oil at $2.15 per barrel would cost the industrial user under 5¢ per usable therm. The 25%-75% mixture if sold at the bare cost of production . . . without a cent added for mar-

keting expense . . . would cost above 10¢ per usable therm or over 100% more.

Even with a mixture enriched to a 50-50 basis, this richer mixed gas of 765 B.T.U. content would cost domestic users 10% more and if sold at cost would approach double the cost of #6.

It appears from this analysis that the only apparent savings to be made by natural gas in New England is at the level of kitchen usage where a reduction in the average gas bill of from 50¢ to $1.00 per month might prove possible if the utility companies chose to lower their basic rates rather than to use any existing natural gas economy to better their earnings.

Motives Should Be Questioned

If the adaptation of natural gas to the Atlantic Seaboard areas holds no greater promise than this, it is logical that its "public necessity and convenience" should be questioned. And logical, too, that inquiry be made into the basis upon which it expects to compete with an oil-burning economy.

An insight into a potential expectancy of natural gas competitive policies is partially deducible from the recent report of the U. S. Bureau of Mines. This report shows that of the total natural gas sold in 1948, after oil field usage, approximately 26% went into the domestic market at an average rate of 65.3¢. Approximately 9% went to the commercial market at a 44¢ rate; the balance . . . 65% of the total . . . to industrial users at the astonishingly low rate of 17.9¢.

Under such an almost unbelievable rate structure, domestic and commercial users . . . consuming but 35% of the total natural gas sold . . . actually paid 80% of the total revenues received from gas sales. Sales made under protection of monopoly franchise privileges, where no competition is possible, obviously served to pay the freight for ruinously low prices in the industrial field where natural gas must meet the competition of oil and coal.

If this is an index to the nature of natural gas competitive strategy, it would seem to represent a "robbing Peter to pay Paul" type of economics. Where does the community really gain if the household, the hotel and the restaurant must pay high in the domestic and commercial fields in order that the gas-utility may be privileged to sell low in the industrial field? And where is the true economic advantage in this process if communities and areas find established local business crippled by such subsidized competitive procedure?

The question of destructive competition from natural gas which such analysis raises assumes even a greater and a more serious import when it is remembered that now such sales economics are about to be applied to areas that constitute a controlling factor in our vital petroleum industry.

Those who study this question deeply soon find themselves wondering why this stepchild of petroleum exploration should be enjoying such competitive privileges and have almost free rein to market its product without public consideration for the impact of its strange economy on the economy of other industries that market the same end product . . . energy.

Perhaps the entry of natural gas into the Middle Atlantic and New England states will serve to accent the advisability of closer scrutiny of our national policies toward its promotions. The spotlight that it is drawing toward itself by its present efforts to gain a dominating foothold in these areas may serve, too, to spotlight the need for judicious consideration on the part of federal, state and municipal authorities of such subjects as realistic restrictions on quantities to be allowed, pricing policies to be permitted and constructive regulation of competitive procedure.

Those who sell natural gas . . . both interstate transmission lines and local gas utility companies . . . are the beneficiaries of monopolistic rights and privileges inherent in the protective franchises which have been granted them as a public policy. Competition is not permitted within the realm of their basic product. But they are free to use this protected position and their monopolistic product to compete with others.

Those who face this competition must do so as private enterprises . . . private enterprises that represent an overwhelming number of small American business men. No amount of pollyanna propaganda, purported public economies or enthusiastic sales presentations should be permitted to obscure this basic truth. Natural gas, in competition with private enterprise, should not be considered solely in the light of its own intimate interests, but should be soberly judged, too, from its possible and potential effect upon a great and important section of our distributive system. To foster the one at the expense of the other could prove to be a costly procedure both economically and socially.

The time for an appraisal of the proper place of natural gas in our national economy seems to be approaching if, in fact, it is not already at hand. It would seem to be a public duty that the entire petroleum industry should start aggressively a presentation of its side of the case.

Magazine Finds 30% of Readers Using Oil Heat

A STUDY of the teen-age girl subscribers to *Seventeen* magazine was conducted by a mail questionnaire sent to 3,000 Consumer Panel members, from which a usable sample of 1,808 was obtained. Aimed at learning details of the subscriber's home and its equipment, answers to a question to determine the type of central heating revealed that 34% of the homes use coal, 29.5% oil, 27.7% gas and 7% other types.

A supplementary question evinced the information that of the homes using coal 75.7% were owned by the family occupying the premises, 86.7% of the oil users owned their home, 90.7% of the gas users and 88.2% of the families that employed other types of fuel for heating.

A question, "What is the age of the appliances you now have?", shows the following breakdown for:

Central Heating	*2 Years & Under*	*3-10 Years*	*Over 10 Years*	*Don't Know; No Answer*
Coal Furnace	9.1%	30.8%	32.7%	27.4%
Oil Furnace	27.3	39.0	14.8	18.9
Gas Furnace	25.7	42.3	14.1	17.9
Other	19.7	41.0	11.0	28.3

Everybody's a Customer

Meenan Oil Serves Almost Every House in Town of 35,000

by

Robert Gray

THERE IS NO OTHER town in the country that very closely resembles Levittown, Long Island, and there is no other fueloil marketing operation that resembles the one conducted by Meenan Oil Co. of New York in serving Levittown's 35,000 inhabitants.

This unique village, measuring about four miles each way, is only three years old and its ten thousand new homes were all erected by one builder on land that for generations had been a good potato patch. Perhaps the best home value for the money in the New York metropolitan area, the houses have four rooms, dinette and bath, with a large expansion attic, and the price of $7,990 includes refrigerator, automatic washer and other doo-dads, but most important, it includes automatic oil heat in every home.

The builder makes direct factory deals for his oilfired units. The first year's crop of 2,000 installations went to Timken, the next year's 4,000 were York, and last year's 4,000 plus were made by G-E. The average firing rate on these burners is .65 gph, and Meenan's burner service department has a unique experience in handling over 10,000 of these low capacity units, especially since they cover the range from wall flame rotary to high pressure gun and to low pressure special boiler units. To the extent that the company sells burners outside of Levittown, Meenan is a Timken dealer.

Meenan has been close to Levitt Brothers for many years, having taken on the burner service responsibility in earlier home building developments of the company. When Levittown was started other companies got the jump on service and oil business. But in the winter of 1947-48 they had bad luck in getting enough oil to keep the first 2,000 homes warm. Meenan had the oil, so the builder arranged to assist him to take over the whole responsibility. Today only about 100 homes in town are served by other companies, Meenan has 10,000, even though last winter when oil was more than plentiful one Brooklyn company circularized all of the homes offering to supply them at prices well under the market . . . with no success.

The first year's warranty service on burners is contracted to Meenan by the builder. Then all of Levitt's real estate salesmen, in talking to the prospective home buyer about operating costs point out that Meenan will supply fueloil for heat and hot water on an annual budget plan of approximately $9 a month, since the average consumption is just under 1,000 gallons.

This service tie-up and the budget arrangement at the time the house is bought gives Meenan a virtual assurance of about all the business as long as the company treats the customers well.

As a fueloil distributor, how would you physically handle distribution up and down street after street where every home occupant was your customer? That problem has given Meenan, and particularly its Levittown manager W. C. Henwood, a lot of thought.

In the first place a local bulk plant was erected with 145,000 gallons underground storage, supplied by two of the company's own transports hauling from tidewater plants on Long Island Sound twenty miles to the north. Then several new trucks had to be bought since in the fall season new customers were being added at the rate of fifty a day.

Henwood knew as time went on that conventional oil delivery methods needed revision for his mass production neighborhoods so after several ventures he came up with a very significant development in the form of a truck fitted for dual deliveries. The company now has four of these special dual trucks so equipped that two homes are supplied with oil simultaneously and three homes are served before moving the truck to its next stopping point.

The idea of having a double set of equipment on a truck is not in itself new . . . some Midwest marketers for years have had trucks with two meters, hose reels, pumps, etc., mounted in a

Meenan president *Wm. F. Kenney, Jr., on left, discusses operating methods with W. C. Henwood, manager at Levittown.*

Starting *for two houses are driver Nate Hoy on right and helper Louis Selkirk.*

rear compartment, but these were fairly small compartment trucks carrying two products, one heavy and one light, on farm routes or in neighborhoods where space heaters and oilburners were served on the same round.

Meenan's dual trucks are large, 3,300 gallons net, they have no compartments and carry only No. 2 oil.

It was interesting to follow one of these around through a neighborhood. The big truck would stop in front of the center one of a group of three homes. The driver and helper would each grab a nozzle and pull a string of hose to the first and third houses. When the tanks were filled the driver would go back to the truck, start the reel and it would pull in his hose. The helper would pull his hose along to serve the middle house of the three.

Then while he was filling the middle house tank and getting his hose reeled in, the driver would be making out the tickets for all three customers. He would hand these to the helper who would place them under the front doors of the three houses while the driver moved the truck three houses further down the block. This operation of serving three houses took just five minutes.

There were some real advantages that helped the boys speed this up. In the first place all Levittown houses have radiant heating in the floors—no basements—so all tanks are buried under the front lawns up near the houses. They are either 220 or 275 gallon tanks, so do not take big drops. Then they are all equipped with VENTALARMS so the men never enter the homes nor talk with the

Dual truck *in close-up view, with driver Nate Hoy preparing tickets while his helper is still serving one house. The ticket printing meters were furnished by Neptune, the hose reels are Hannay, operated by power take-off from the engine; the hose is Hewitt soft wall one and one-half inch size delivering 57 gpm; the truck is a Mack.*

occupants. Moreover, in early January at the time of the visit there had been a lot of days abnormally warm so the average drops were running just under 100 gallons. In fact, in the several weeks since the dual trucks first started in late November the average drops have been only 125 gallons, since the whole season around New York was decidedly mild to date.

This brings up the question of the automatic delivery system used. Obviously it can't be a straight degree day method with individual K factors. It is a route system and theoretically the frequency of routing is controlled by elapsed degree days. But in a mild spell it doesn't actually work out that way. Henwood knows that he must never let the load get ahead of him. You just can't have ten thousand tanks run low in a severe cold period, so in mild weather he pulls ahead without waiting for the tardy degree days.

From experience thus far he knows that the four dual trucks can take care of the full needs of the ten thousand Levittown homes with minor exceptions, such as occasional run-outs, night deliveries or COD's. There are quite a number of COD's, since four thousand of the homes in the development are not sold, but rented to G.I.'s, many of them still in service over at Mitchel Field. This is not to say that soldiers are as a group bad risks but rather that they come and go and some of them haven't had time to establish their credit in the community.

In any event, the four dual trucks with the help of the one single 2,000 gallon truck on the odd jobs can handle the whole ten thousand houses, which means ten million gallons in the season, and all with nine men . . . five drivers and four helpers.

In normal winter weather the dual trucks average around 12,000 gallons delivered in ten hours, or about 100 drops. This is somewhat different from the experience described earlier of seeing three homes served in five minutes, but with time lost where less than three houses must be served at a stop, time lost in turning the big truck at corners, in going to other streets, in fighting storms, in driving to the bulk plant for loads and what not, the average over a period of time is around six minutes to a delivery. On a special test in November one dual truck delivered 19,000 gallons in 14 hours.

Town Is Zoned

For internal control of deliveries, the town is set up on a basis of zones and subzones . . . 264 of these with 40 houses to a subzone. Each dual truck must serve 64 subzones, which means that it can reach each house every four weeks if necessary, since the trucks work six days a week at midwinter.

The delivery tickets, which are used in the Neptune printing meters, are all made up in advance by Addressograph equipment so that the driver on the route has only to fill in the amount of oil delivered and the price extension. With 70% of all customers on the budget plan there is very little complaint or even concern about when oil is delivered or how much at a time.

When a customer calls in day or night to ask about an oil delivery or a run-out, a clerk quickly looks up the street name and number in an indexed book and learns the zone number of the location; then promptly finding a page with that zone number she can tell the customer just what day the truck will be coming around. If the customer claims an actual run-out the clerk knows that that is virtually impossible, so a service man is sent to see why the burner stopped. In December there was only one bona-fide run-out, but there were several more such complaints where it was found that the burner stopped for some other reason. All call slips of that nature are routed across Henwood's desk to keep him aware of their frequency.

Meenan's service department at the Levittown division is a rather large operation, with 31 men. Not all of their work is done on the ten thousand burners in the village although the requirements there are somewhat higher than usual because of the low firing rates of all the installations. The company does operate from this branch for quite a distance outside of Levittown, getting around Nassau and over into Suffolk County with enough oil customers to use three more 2,000 gallon trucks, sell some Timkens and render burner service. For use by the service department Henwood bought a dozen very small trucks called "Thames" which is the British made Ford. He finds them exceptionally well built, dependable and cheap to operate.

Out from New York in time to join the party for lunch was Wm. F. Kenney, Jr., president of Meenan Oil and an enthusiast on the new methods being devised for this Levittown operation. Driving about the village he pointed out that the company also dominates gasoline sales with its own big stations in

Serving two homes *simultaneously. The house between will be given oil by one man after these two are finished and while the other makes up the tickets. These are the newer homes, sell at $7,990.*

Bulkplant *office and loading rack of Meenan's Levittown branch. Storage tanks with 145,000 gal. capacity are underground.*

each of the shopping centers, marketing Esso products and being the only stations within the village proper.

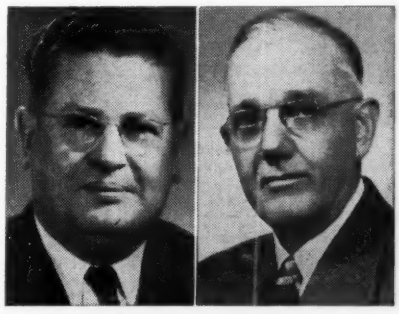
In a discussion of over-the-road transports that the company uses to bring in its own oil the question arose as to whether it was cheaper than hiring one of the regular transport companies to move the product. Kenney and Henwood estimated that they bring in the oil with their own equipment for about .19¢ a gallon including all interest, depreciation and amortization costs on the 5,600 gallon trucks which cost $13,000 each. The best commercial hauling rate offered is .25¢. This saves $6,000 a year on the Levittown gallonage, but there are other advantages in having your own transports. There is the freedom to operate at any hours and under all conditions, which are sometimes objectionable to hired haulers. The haulers especially squawk if they feel that their account is requiring too much overtime work. In the busy season the two Meenan transports run 16 hours a day to haul 80,000 gallons, which means that they have a cushion of eight hours against bad storms or deep snow. Also the four dual delivery trucks are fitted for transport work in an emergency.

Among the several thousand fueloil distributors in the country no two are alike in all phases of their operations . . . it's a diversified industry. Very few, however, are as far removed from the norm as is Meenan at Levittown, with ten thousand customers next door to each other and a few thousand more to come in 1950. And all the company has to do is to keep each one genuinely satisfied. Nice work if you can get it.

Warm Air Meeting Climaxes Progressive Year

MORE THAN 570 heating men attended the 36th Annual Convention of the National Warm Air Heating and Air Conditioning Association, held at Cleveland on December 14 and 15. Research, industry education and publicity highlighted the theme of the meeting and were dubbed the "Three Musketeers" working together for the betterment of the industry. Prior to the convention sessions, committees and the board of trustees met to review 1949 activities and plan for this year. Among items approved was a 1950 budget of $134,756. Research activities are to be expanded, industry education furthered through revision of technical manuals, additional Indoor Comfort Conferences and more college and university sponsored short courses. Publicity efforts, directed at the consumer and the industry, also are to continue at an increased rate.

Nomination and election of new officers and directors were accomplished toward the end of the first day's morning session. C. S. Franke, American Furnace Co., was named president of the association; W. D. Redrup, Majestic Furnace Co., first vice president and C. B. Phillips, Surface Combustion Corp., second vice president. George Boeddener was reelected managing director and secretary-treasurer. Retiring president, Atlee Wise, was elected to the office of ex officio. To replace members of the Board of Trustees retiring in accordance with limitations of office prescribed in the Constitution and By-Laws, the following were named: R. M. Cook, Thatcher Furnace Co.; H. G. Cross, Waterman-Waterbury Co.; M. I. Levy, Viking Air Conditioning Corp., and L. S. Redford, Jackson Church Co. Other members of the Board are: H. F. Curtis, Auer Register Co.; G. W. Denges, Wiliamson Heater Co.; F. L.



Franke **Redrup**

(*Continued on page 78*)

Floor Furnace Installations

Properly Understood, Units Perform Well In Small Houses

by
Robert K. Thulman*

IT IS THE PURPOSE of this article to explain the fundamental principle of the floor furnace and to describe its application to the heating of small houses.

The typical floor furnace is a warm air heating device, completely self-contained and arranged to be suspended from the floor construction. The device itself consists of four basic elements:

1. A combustion chamber equipped with either an oil or a gas burner.
2. An outer casing.
3. An inner shield surrounding the sides of the combustion chamber, providing a space between its inner surface and the sides of the combustion chamber and a space between its outer surface and the outer casing. It is arranged so that these spaces are interconnected at their lower ends.
4. A combined inlet and outlet grille fitting over the top of the outer casing at the floor level.

A cross section through a typical floor furnace showing the four basic elements named above is shown in Figure 1.

The movement of air through the floor furnace takes place in the direction of the arrows shown in Figure 1. This movement is increased when the difference in weight of the two air columns, the column of air heated by the combustion chamber and rising through the center of the device, and the column of cooler air descending in the space between the inner shield and the outer casing, is increased. This motive force, upon which circulation of air through the furnace depends, is known as the gravity circulating head. The circulating head increases with increase in height of the two air columns and with increase in temperature difference between the warm and cool air columns.

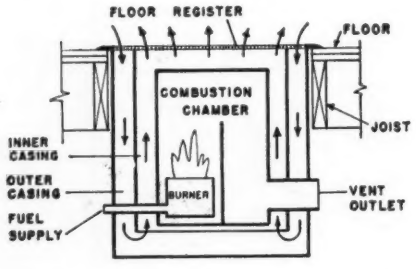


Figure 1. *Section through typical floor furnace.*

Floor furnaces are designed to be installed in one-story houses with a crawl space under them. The fact that crawl spaces are usually no deeper than necessary to provide minimum protection from termites and to provide the minimum amount of ventilation and the minimum space for access under the house, restricts the vertical dimension of a floor furnace. In most installations the depth of the crawl space is insufficient to accommodate the floor furnace and a pit as shown in Figure 2 is necessary.

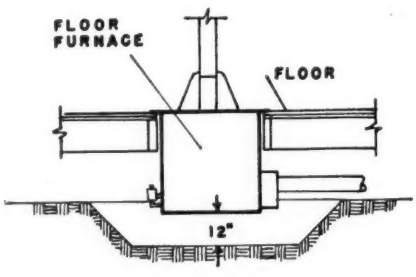


Figure 2. *Section through floor furnace showing pit to provide clearance.*

The construction of such a pit involves the possibility of its filling with water and flooding the furnace. For this reason pits should be built of waterproof construction and with a raised edge to prevent the entrance of surface water. Such a pit is shown in Figure 3. The recommended minimum clearances are also shown in this figure.

The restricted vertical space is responsible for the fact that floor furnaces are designed to operate at much higher outlet temperatures than are common with gravity warm air systems installed in houses with basements. The vertical height of the air columns in a gravity warm air system, even in a one-story house from the grate level to the centerline of a register on the first floor is about 8 feet. The temperature of the air leaving the register of a gravity warm air system is usually about 200° F.

A comparison of the gravity warm air furnace and the floor furnace showing relative height of the air columns, outlet temperatures and circulating heads is shown in Figure 4.

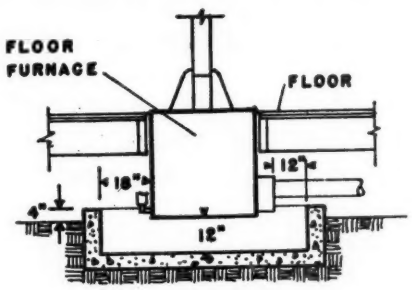


Figure 3. *Section through floor furnace showing concrete pit to provide protection from flooding.*

The temperature of the air descending through the return duct is about 70° F. The difference in weight between the 8 foot descending column of air at 70° F. and the corresponding 8 foot rising column at 200° F. is about 2 ounces. This is the circulating head that causes air movement through the system. If the height of the air columns were reduced to 2 feet the circulating head would be only one-half ounce and the furnace would have to be very large to produce a reasonable performance. The vertical height of the air columns in a floor furnace is about 2 feet so that a much higher outlet temperature must be used to move a reasonable volume of air.

Safety requirements of the Underwriters' Laboratories, Inc., for the approval of oil-fired floor furnaces, restrict the outlet air temperature to 350° F. but even at this temperature the circulating head is only about 0.8 ounce.

The relatively high outlet air temperature causes the central or outlet section of the grille to be heated to uncomfortable temperatures but the temperature is apt to be even higher due to the exposure of the central section of the grille

*Mechanical Engineer, Division of Standardized Building Codes and Materials, Housing and Home Finance Agency, Washington.

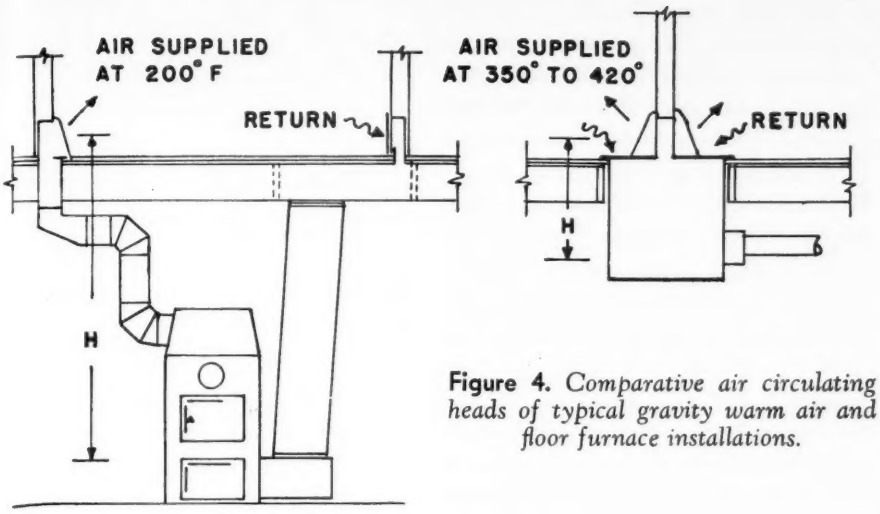


Figure 4. *Comparative air circulating heads of typical gravity warm air and floor furnace installations.*

to the upper surface of the combustion chamber. Heat is radiated from this surface, which may be as high as 1,000° F., to the metal grille raising its temperature even above the temperature of the air passing through it. It will be seen from Figure 1 that the upper surface of the combustion chamber is fairly close to the under side of the floor grille and that this radiation effect is of considerable magnitude.

Because of the high temperature of the outlet air and the high temperature of the center section of the floor grille a hazard is involved in the use of floor furnaces. Placed in the path of traffic between bedroom and bathroom, as shown in Figure 5, there is a decided hazard to anyone walking between bedroom and bathroom in bare feet.

It is especially hazardous to children who, on their way to the bathroom at night, are not apt to be as wide-awake as adults. The location shown in Figure 5 illustrates another hazard. Note that the door of the linen closet swings outward over the grille. Left in this position as shown in Figure 6, it is exposed to temperatures which may ignite it and start a serious fire.

There is a secondary hazard in locating the floor furnace close to a linen closet because of the danger of combustible material stored in the closet accidentally falling off the closet shelves onto the hot floor furnace grille.

A location quite common for a floor furnace installation is in a framed opening between living room and dining room as shown in Figure 7. This is not a good location because of the danger of a small child crawling onto the hot surface. There is also a hazard due to the propensity to decorate the opening with curtains or drapes as shown in Figure 8.

Installation manuals of many floor furnace manufacturers, apparently giving little consideration to the hazard involved, recommend both the hall location and the between-room location for the flat register floor furnace with the idea that warm air is better distributed in these locations than if the floor furnace is located in the living room itself.

When the furnace is located in the hall, the circulation of air is largely within the hall itself, the walls of the hall acting as a casing with the doors corresponding to outlets from that casing. The fact that the return area of the furnace grille is within the same small hall space as the supply outlet section tends to cause a recirculation of air within the hall space itself so that the furnace will shut off on the high limit control sooner than it would if it were located in a larger space where air is returned at a lower temperature.

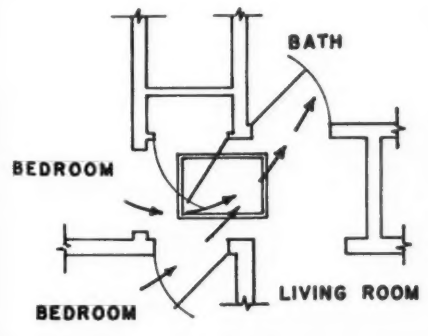


Figure 5. *Hazard of hall location where floor furnace is in path of traffic between bedroom and bath.*

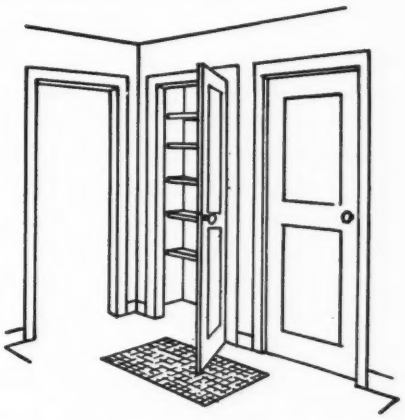


Figure 6. *Hazard of hall location of floor furnace where linen closet door can swing over hot floor furnace register.*

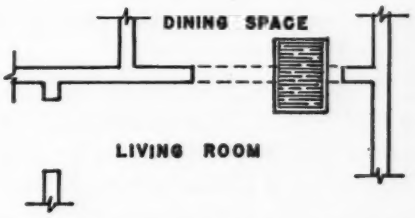


Figure 7. *Common location of floor furnace in arched opening between dining space and living room.*

While it is probably true that bedroom heating is better with the hall location than it is with the furnace located in the living room, it is also equally true that living room comfort is not as good with the hall location as it is with the floor furnace located in the living room itself. The question which this point raises is: Is it not better to do a reasonably good job of heating the living room at the sacrifice of full comfort in other rooms than to do an inadequate job of heating all rooms? It should be borne in mind that the floor furnace cannot be expected to produce the same quality of performance as a more complete heat-

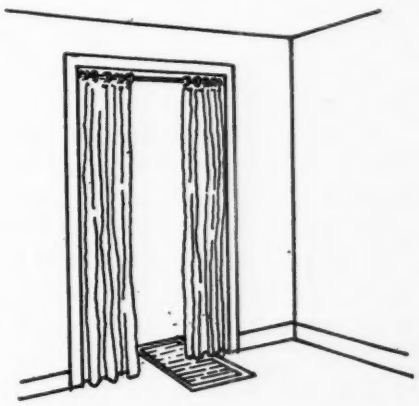


Figure 8. *Hazard of floor furnace location in framed opening between dining and living spaces.*

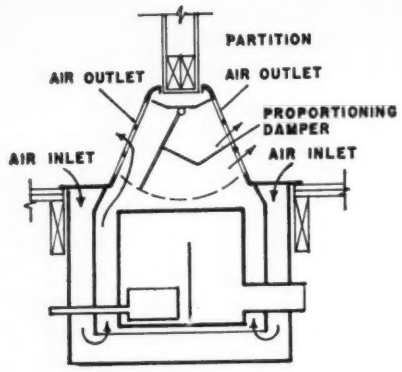


Figure 9. *Section through dual register floor furnace.*

ing system. Its performance is improved by locations which are fairly central but central location does not necessarily imply hall location.

All of the previous discussion is concerned with the flat-register floor furnames. A modification of the floor furnace which overcomes practically all of the objections already mentioned is the wall-register type of floor furnace. This modification involves only the grille itself, all other elements of the device being the same as in the flat-register model. The wall-register type of unit is made in both single and dual-register models. A cross-sectional view of a dual-register floor furnace is shown in Figure 9 and a view of an installation as it appears in the house is shown in Figure 10.

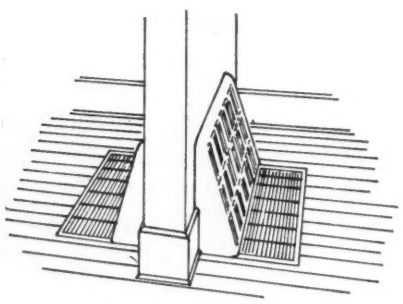


Figure 10. *View of dual register floor furnace installation.*

It can be seen from these two views that the difference between the wall-register model and the flat-register model consists merely in sloping the central or outlet section of the grille to a nearly vertical position and locating the furnace under a partition. In the case of the dual-register unit, warm air can be supplied to and returned from two spaces simultaneously so that the need for dependence upon central location for good heat distribution is not as important as it is in the case of the flat-register type.

Figure 11 shows the hall and room arrangement with a dual-register unit installed in the partition between living room and hall. It is apparent that the objection to the flat-register unit, i.e., danger of children crawling on the hot grille, is largely overcome by this substitution. An additional advantage is the direct supply of heated air to the living room and to the hall. In this case the damper shown in Figure 9 for regulating the air flow to either face of the wall grille should be provided with a stop so that the living room side cannot be shut off completely. The design of the damper is such that both sides in any case cannot be shut off. The installation shown in Figure 11 also shows how a door can be installed in the framed opening between the living room and hall, thus improving the privacy of the plan. The wall-register unit also requires less floor space than the flat-register type.

These advantages of the dual-wall register unit are offset to some degree. First, the dual-register itself is more costly to construct. Protection to combustible construction in the partition in which it is installed is provided by air spaces on top and sides and the additional metal and welding necessary for this protection add to the cost. Second, the partition framing constitutes an additional cost although not one of any great magnitude. Third, a location in a partition over the main girder involves the construction on each side of the opening of piers to support the girder. In place of the main girder, a masonry

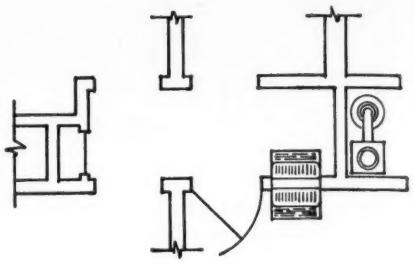


Figure 11. *Dual wall register floor furnace showing hall and room arrangement.*

foundation may be used to reduce framing costs. In general, location over a girder is to be avoided because of the cost involved although it is often the case that such a location is best from a heating standpoint.

Framing for all floor furnaces, flat-register or wall-register, involves more or less complication. Typical framing is shown in Figure 12.

Floor furnace manufacturers usually provide layouts showing the dimensions of framed openings to receive the furnace but do not ordinarily show detailed framing requirements because of the variety of load conditions resulting from varied positions of the furnace in the structure. The framing shown in Figure 12 is intended to be illustrative only. Actual framing must, of course, be in accordance with the requirements for the loads in the particular case under consideration.

The framing around a floor furnace is almost in direct contact and sometimes may actually be in direct contact with the outer casing. As long as the air flow is unobstructed and normal and the limit control functions properly, direct

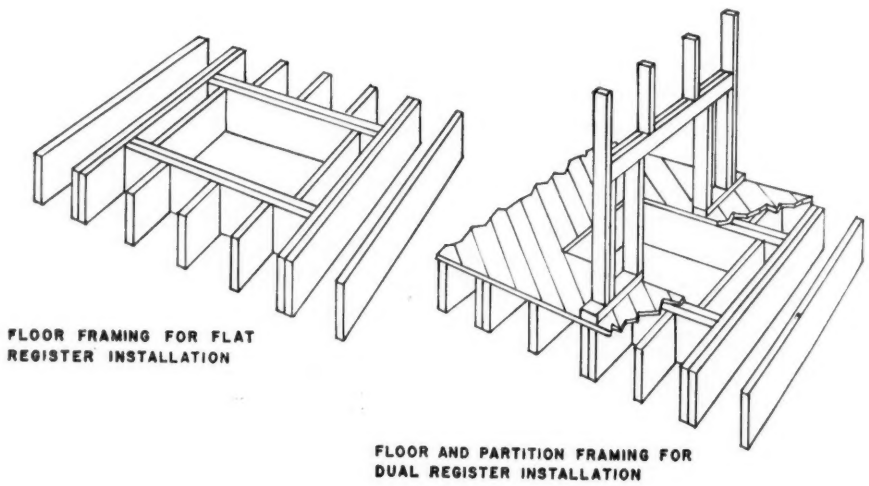


Figure 12. *Typical framing for floor furnaces.*

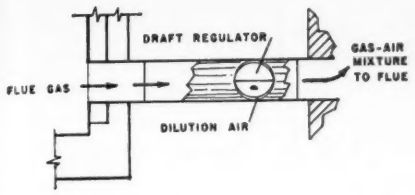


Figure 13. *Draft regulator installed in breeching of oil-fired floor furnace.*

contact between the casing and surrounding framing does not constitute a hazard. The cool return air flows downward between the outer casing and inner shield and keeps the outer casing and the perimeter of the register cool.

Some attempts have been made to connect ducts to the sides of the casing to return air from remote locations. The object of these attempts has been to improve the air circulation within the house or to induce a flow of warm air into a room by drawing cool air from that room.

Unless the floor furnace is specifically designed for such auxiliary return and unless the appropriate listing by Underwriters' Laboratories, Inc., permits such connections, they must not be used. Introduction of auxiliary return air into the side of the casing reduces the normal flow of cool air downward through the register. This reduced flow may be insufficient to provide adequate protection to the framing and a serious fire hazard may result.

The venting of floor furnaces requires some consideration beyond that given to the venting of heating equipment installed within the living space of the dwelling or in utility rooms or basements. The outer casing, draft regulator of oil-fired furnaces, breeching and lower part of the chimney or vent are exposed to relatively cold air under the floor. The air for dilution of flue gases entering draft regulator is drawn directly from the under floor space and is cold. The temperature of the mixture of flue gases and dilution air is consequently considerably lower than is the case where dilution air at room temperature is drawn into the breeching.

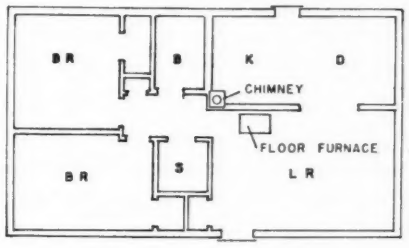
A typical draft regulator installation used with oil-fired floor furnaces is shown in Figure 13.

Since the draft regulator furnished with oilfired floor furnaces is a separate device its location in the breeching can and should be close to the chimney. In this case the flue gases remain hot over a much greater area of the breeching than is the case with the gas-fired floor furnace where a draft diverter is attached to the furnace casing.

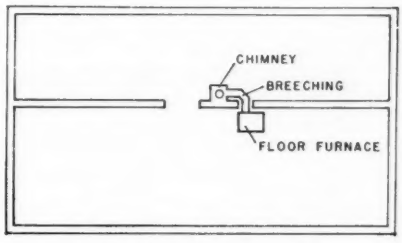
A second consequence of excessive temperature drop in the flue gases due to cooling in the breeching, is the adverse effect on chimney draft. Chimney draft is dependent upon a reasonably high average temperature and, when the entering temperature is low, the average temperature is correspondingly lower and the available draft is reduced. The maintenance of high draft is important for oil-fired floor furnaces to provide the air necessary for combustion.

To avoid temperature drop in the breeching itself, the breeching should be as short as possible. This means locating the chimney or vent close to the outlet of the floor furnace. Even when the breeching is short it should be insulated.

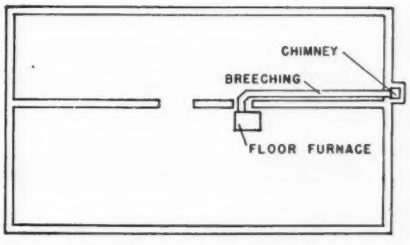
In Figure 14 are shown good and bad practice with regard to chimney or vent location in typical small house plans. It



PLAN OF FIRST FLOOR



FOUNDATION PLAN SHOWING GOOD LOCATION OF CHIMNEY



FOUNDATION PLAN SHOWING POOR LOCATION OF CHIMNEY

Figure 14. *Chimney location for floor furnace.*

should be noted that chimneys located on the exterior walls of houses are especially to be avoided because of the exposure of the entire height of the chimney to cold exterior temperature and the length of breeching usually involved.

The decision to use a floor furnace in a particular house involves several considerations. Reference should be made to the acceptability of the quality of heat distribution that the floor furnace is liable to provide in terms of uniformity of temperature distribution. Located in the living room it can hardly be expected that the floor furnace will provide a uniform horizontal temperature distribution to other rooms since circulation of warm air to these rooms is by "overflow" and depends upon a temperature difference between rooms. If the overflow is through fairly short paths unimpeded by doorways, the distribution of heat will be fairly uniform.

The plan of the house in terms of circulation between rooms and with particular reference to the floor furnace location is, therefore, a primary consideration. A spread-out room arrangement with passageways of any great length is not suitable for "overflow" distribution and such plan may require two or more floor furnaces.

The effectiveness of overflow distribution is improved with the use of insulation. As insulation of the surfaces—floor, walls, and ceilings—is increased, the temperature of rooms depending upon overflow heat from the floor furnace located in another room tends to approach more closely the temperature of the room in which the floor furnace is located. Particular attention should be given to generous use of insulation in walls and ceilings. More particularly, overflow distribution and even the character of the heat distribution by convection in the room in which the floor furnace is located are apt to increase the discomfort of cold floors and for this reason the floor construction should be exceptionally well insulated.

There are Commercial Standards promulgated by the National Bureau of Standards, Washington, D. C., covering floor furnaces. Commercial Standard CS113-44, "Oil-Burning Floor Furnaces Equipped with Vaporizing Pot-Type Burners," for the construction and

(Continued on page 127)

Designs for Better Heating

Results Come of Adding Ingenuity to Book Learning

by
J. W. Schulz

HORSE SENSE still is indispensable for designing heating plants and ending heating trouble, even though the importance of book learning has increased in recent years because new types of heating plants have been developed and are being used widely.

Book learning is the basis for figuring the heat losses of rooms, duct and pipe sizes, register and radiator outputs, boiler and furnace capacities, and gph firing rates needed to carry certain loads. The methods used to solve problems involving these factors are not new today; these methods have been used for years and years.

New book learning, not obtainable from old textbooks, throws light on latest developments in furnace-duct heating, baseboard radiation, radiant heating, controls, and summer-winter hot water layouts.

Book learning needed on just-out ideas and products often is obtainable only through discriminate reading of technical literature issued by the manufacturers advancing the ideas and products.

Common sense is needed to put to use this book learning. This is brought out excellently by problems on the proper thickness of insulation for a heating boiler, power plant boiler, hot water tank, oilburner firebox, or outside wall of a building. Applying book learning solves these problems, giving answers in terms of the proper thickness of a certain insulation. But common sense tops off all the figuring and leads to a satisfactory solution.

Common sense is used also, for example, in deciding which type heating plant and which control features will serve best for a particular building, how many boilers or furnaces will carry best a large load, and the capacity of the water heating equipment needed to avoid complaints in, for instance, a certain residence, apartment house, hotel, or restaurant.

Information from books forms a foundation necessary for solving such problems, but common sense and even wisdom are indispensable for arriving at exquisite results.

Inventiveness, ingenuity, and some degree of daring also help solve problems in modern heating plant design and trouble shooting.

The following case histories bring out these points. These accounts do not suggest that tinkering, kitchen-mechanics, or cut-and-try methods be used instead of engineering efforts. In these cases common sense was added to top-flight engineering thinking, not used in place of it.

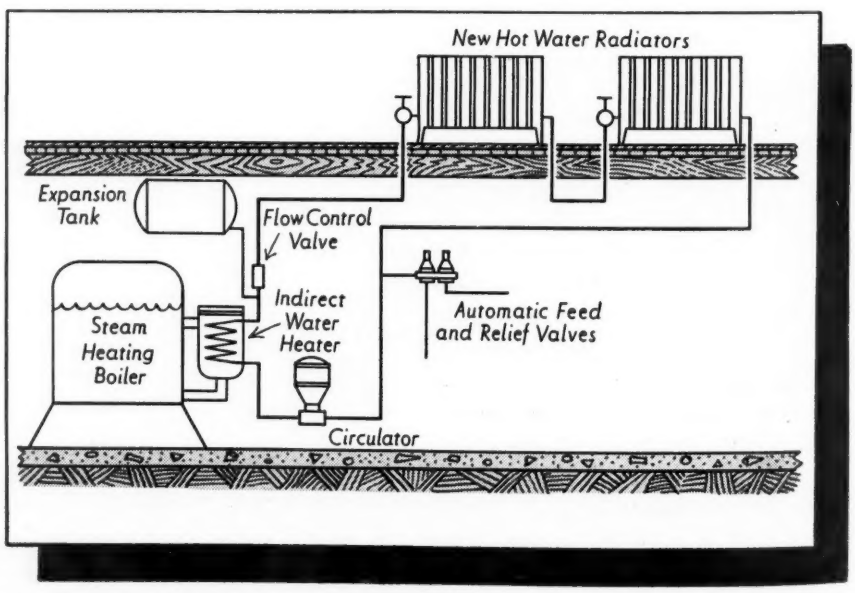
Case #1. Ending Cold-Chill Complaint

Every engineer who studied the operation of this heating plant, throughout months and months of arguing with its owner about paying in full for it, found it truly excellent in every respect. The owner, who had retired to build his dream house, refused to take any interest in the excellence of the heating plant, and said the system gave him a cold chill in his back that he'd never had before.

After considering fully every possible way of ending the arguments, the contractor who had installed the heating plant decided to follow the advice of his friend, a heating expert.

"All the owner's favorite chairs, in the living room, are shoved back against outside walls," this heating expert pointed out. "The nearby windows can cause cold drafts, especially when the room gets no heat for long periods on mildly cold days because the heating plant is considerably oversize. Put heat behind those chairs any way you like, but make it a steady heat of intensity the owner can set lower or higher to suit him, and you'll give him the warm chairs and warm-back comfort that alone can end his complaints. Take the regular room thermostat out of the living room and install it far away in a room in which it will not be affected by the overheating of the living room that probably will result from the old man's keeping warm his chairs and his back.

"As the owner has plenty of money, and does not say you stuck him in in-



Case # 2. *Added to a one-pipe steam plant, this system is made up of forced-circulation hot water radiation supposed to stay warm at all times to provide comfort in a room that chills far more rapidly than the other rooms in the house. Design temperature for the radiators is 160° with the boiler water 200°. A gate valve, not in the drawing, can be closed somewhat to decrease the circulation of boiler water through the shell of the indirect water heater or heat exchange. This valve can be used to reduce the temperature of the radiators and arrive at smooth, steady heat instead of on-off heat.*

stalling a standard heating plant that all authorities agree is excellent, explain the warm-back special heating feature to him. Sell it to him on a fair-profit basis. The feature will cost less than half of what he paid for his television set, for example, and certainly will mean far more to him."

The contractor sketched up and studied every way he could think of for warming continuously the backs of the chairs, short of providing each with an automatically-controlled electric heating pad. Warming the outside walls was considered. In the end, through use of good horse sense, an excellent arrangement was installed at nominal cost.

This indicates how common sense thinking was used in solving the problem. Warming the outside walls was ruled out because great amounts of heat would come from wall areas not noticeably hot. It was decided that the arrangement used along the outside walls should provide very little heat, partly because this heat would be provided continuously, but that by going near the arrangement giving the heat, the occupants of the room should be well aware of the outpour of heat. A relatively small area noticeably hot would fill the bill, not a great area only slightly warmer than 70°.

Case #2. Heat for Picture-Window Room

In this steam-heated house, at first it seemed that adding picture windows to three sides of a 14′ x 18′ room could be balanced heatwise simply by installing larger radiators in the room. The owner always had gotten along well with steam heat, and the boiler could carry easily the extra load of the new, larger radiators.

The pleasure in the new room was ruined the first winter it was used, however, by rapid chilling of the room when the radiators cooled, and choking heat from the big radiators when the burner ran to provide heat. Moving the room thermostat into the picture-window room helped but little.

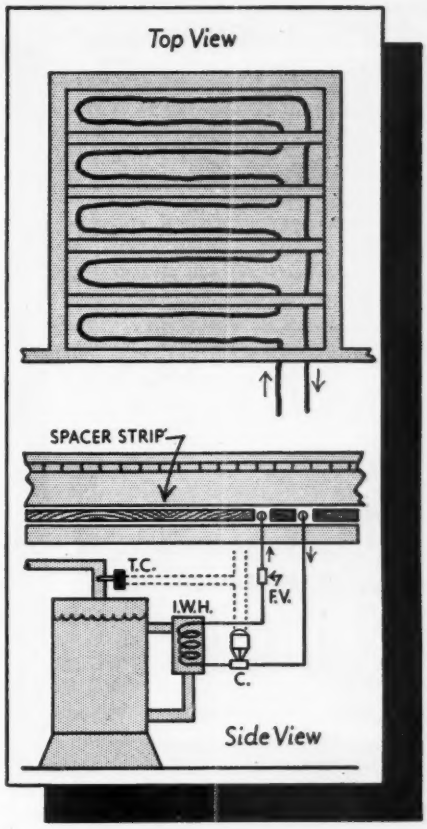
Through use of the arrangement shown in the accompanying diagram, continuous heat was provided for the room from hot water radiators. Back in its old location and not in this room, the thermostat that starts and stops the burner controls the heat for most of the house as it did before. A room thermostat in the picture-window room starts and stops the circulator which, when running, causes the radiators in this room to become warm. Set for maximum sensitivity, this low-voltage, heater-type thermostat causes the circulator to run only three or four minutes at a time. Kept hot year-round because it provides hot water, the heating boiler always is ready to provide heat for the new hot water radiators.

Case #3. Copper Tubing Heats Floor

Here as in the case just described, an indirect water heater (marked **I. W. H.** in the diagram) was used with a steam boiler to provide hot water type heating. Also as in the previous instance, the new system of hot water style is equipped with the standard automatic feed and relief valves, and a basement expansion tank. The expansion tank consists, since small capacity is needed, of a four-foot length of 3″ pipe located above the boiler. **F. V.** in the diagram is a flow control valve.

The idea of the layout is to end complaints about a cold floor in an important room of the house located above a cold, unexcavated space. The whole space can be warmed, in a case like this, through installing in it a radiator of suitable size, but the waste of heat would be tremendous.

Here it was decided to have ¾″ copper tubing, kept warm by heat from the steam boiler, warm the bottom of the beams and floor boards. Arranged as the top view shows, the tubing was fastened at the right-hand end to the floor beams. At the left-hand end it was held up by haywire twisted through staples driven into the floor boards. With the tubing thus in place, in a plane justbelow the bottom of the beams, wooden spacer strips were put in place as the drawing shows. The insulating board, 2″ thick, cleared the tubing because these spacer strips were used. Efforts were made to have the tubing about half an inch clear of the 2″ insulating board, in order to secure maximum heat-output from tubing surrounded entirely by air.



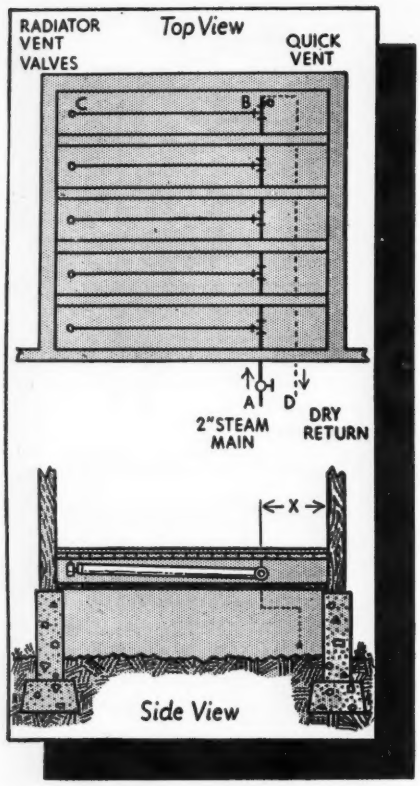
Case #3. *Running the circulator sends heat to a system of ¾″ copper tubing, installed to end the discomfort of an ordinary floor being chilled in winter by freezing air beneath it.*

A reverse-acting temperature control, set at 140° and located above the boiler as the drawing shows, causes the circulator to run when steam is developed because the house needs heat.

This system is not intended to give appreciable heat to the room. It serves only to prevent the floor of this room from being colder than floors located above the heated basement. A steam radiator actually heats the room.

Case #4. Steam for Radiant Heating?

A layout similar to the one in the diagram, in which a one-pipe steam system is used to make a wooden floor warm enough to provide radiant heat, was described several years ago in FO&OH. Here the idea is to take the chill from a floor located over a cold space, and in addition to provide floor heat radiant in nature and sufficient in quantity to permit installing in the room a radiator of one-third or one-half the size used previously. Since the idea was first described, it has been time-tested and proved satisfactory.



Case #4. *Requiring the use of one quick-vent valve and eight to twelve radiator vent-valves for one room, this system brings joy to the hearts of vent-valve manufacturers, even as it proves that one-pipe steam heating adapts well to radiant heating of a wood floor.*

In this instance, 2″ line **A-B** drips downwards towards **B** and connects to dry return line **D.** A steam-main quick-vent valve of impressive ability for venting the line quickly is at point B, the end of the 2″ steam line.

Where structurally this is permissible, the 2″ steam line runs through holes drilled in the floor beams. Otherwise the line would be run under the beams and boxed in with insulating material. Tee's in it would face upward. Nipples and elbows would be used to feed steam to the horizontal lines (**C-B**) located between the floor beams.

Located between the floor beams, pipes **B-C** are 1¼″ size for many installations of this type. Each slopes upward towards the radiator vent valve installed at **C,** screwed into a 1¼″ pipe cap drilled and tapped ⅛″ for this. Hand-hole covers permit reaching all the vent valves.

Below this floor-heat arrangement is wallboard or similar board, on which rests the 2″ thickness of rock wool insulation used to prevent excessive loss of heat downwards.

Distance **X** in the drawing was only one foot for the first installations of this type which were made. Tests of floor temperatures caused **X** to be increased to three to four feet; the 2″ steam header proves to provide ample heat for a space to the side of it by this distance.

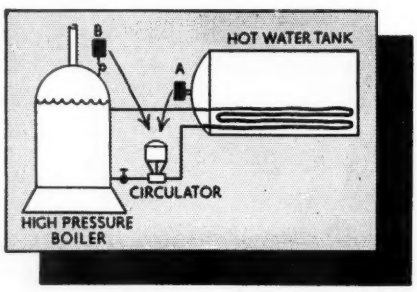
As the steam header receives steam at one end and emits its condensate at the other end, the valve at A can be used to throttle the flow of steam to this floor-heat system. In winter, adjusting valve A causes the floor to be cooler or warmer.

Case #5. Control Underloads Boiler

This idea, first used some 15 years ago, has again and again turned a boiler overload into an underload. Merely installing one ordinary control on the boiler does the trick.

The 20 hp boiler in the diagram serves two functions. First and more important, it must provide unfailing steam, usually at 50 lbs. pressure and never below 40 lbs. pressure, for a line running upwards through the hospital and connecting to operating room sterilizing equipment.

Second, the boiler heats to 170° the 1,000 gallon tank that provides hot water for the hospital.



Case #5. *Wired in series with each other and in the 110-volt feed line to the circulator, both controls must be "on" for this circulator to run.*

According to the figuring of several engineers including those representing the boiler manufacturer, the 20 hp boiler should have carried easily the loads connected to it. Yet the steam pressure dropped again and again with the burner running continuously. Pointing to the needle of the boiler gauge dropping to 10 or 20 lbs. instead of staying above 40 lbs., representatives of the hospital declared the equipment must be torn out and replaced by equipment of adequate capacity.

While this went on, the circulator that pumped boiler water through the coils in the hot water tank (see the diagram) was being started and stopped by tank temperature control **A.** Because starting of this circulator caused the boiler steam pressure to drop when steam was being used upstairs, the valve to the left of the circulator had been closed all the way, then opened only a turn and a half. Throttling any further caused the tank to chill. With the valve so set, the circulator tended to run continuously.

The trouble was ended, after two afternoons were spent studying the job, simply by installing reverse-acting control **B.** This is a steam pressure control wired in series with the circulator and set at 45 lbs. The valve in the circulator line was opened wide after this control was installed.

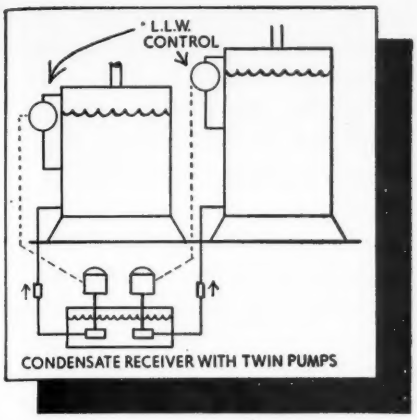
Before control **B** was installed, the hot water tank was the "preferred load" in the sense that even with the boiler pressure dropping the tank could get great amounts of heat from the boiler. With the circulator and burner both running continuously, the tank received Btu's at a certain rate that matched the heat transfer ability of the water heating coil, but the 50 lb. steam line received only the Btu's left over.

Installing control **B** changed matters by making a "preferred load" of the steam supply line. As this control automatically drops the water heating load when the boiler pressure goes below 45 lbs., now the full output of the boiler is available for a sudden steam load. Only extra Btu's, over and above those needed for the steam supply line, go to the hot water tank.

Horse sense says that a hot water tank of this size, chilling below the 170° point at which its temperature control is set, can wait five minutes or even 15 minutes for heat from a boiler that's taken up fully for the moment by a heavy steam load. The way things work out in this instance and several similar cases, the tank is well heated by the Btu's it receives while the boiler is not delivering great amounts of steam. The heavy steam loads occur infrequently, perhaps half a dozen times a day, and last only five to ten minutes.

Case #6. Boiler Waterline Problem

Every so often a problem arises be-



Case #6. *Positive control over the waterlines of two boilers is featured here. Each boiler obtains water from its own condensation pump, started and stopped by a float control on the boiler. Make-up water comes from an automatic feeder on the side of the condensate receiver.*

cause two side-by-side steam boilers, though connected as the book says they should be, won't maintain proper, steady waterlines. The water leaves the gauge glass of one boiler and floods the other boiler. This may relate to using somewhat different firing rates in identical boilers, or to attempts to team up boilers of different design or size. The trouble has occurred where an owner tried to fire one boiler for mildly cold weather, and two during the coldest months.

Such difficulty can be headed off, even using boilers entirely different in design, heights of waterlines, and capacities, by using the rig shown in the diagram. All the condensate goes to a receiver equipped with twin pumps. The left-hand pump, started and stopped by a float control on the boiler, feeds condensate to the left-hand boiler whenever its waterline drops an inch or so. The right-hand boiler similarly receives water from the other pump. The float control on each boiler has two switches, one for starting and stopping the pump, the other to stop the burner in case of low water.

An automatic water feeder puts make-up water into the condensate receiver because the system's need of additional water is shown by a shortage of water in this receiver.

* * *

Book learning, plenty of it, is needed for planning new systems and diagnosing troubles in heating plants already in use. A man needs the information he obtains by studying books. However he needs additionally, to be hard-hitting at solving toughest heating problems, what may be called common sense, or horse sense, or even wisdom. He also needs inventiveness, and ingenuity.

Newcomers to technicalities of heating can help build up these qualities in themselves by making a point of gaining experience rapidly. There's no better way to do this than to go through all the engineering figuring of a heating plant, even a plant designed by another man and already in operation, and then to use modern instruments and recorders to obtain the full story of the actual operating characteristics of the plant. Find out if the heating plant performs the way the book says it should. Combining book learning with actual data in this way helps develop horse sense.

Standards Available for Steel Firebox Boilers

PRINTED COPIES of Simplified Practice Recommendation R157-50, Steel Firebox Boilers and Steel Heating Boilers (Commercial and Residential Types) are now available, according to an announcement by the National Bureau of Standards.

When first issued in 1937, this recommendation provided for the first time a simplified and uniform list of ratings for steel heating boilers of the horizontal firebox type, essentially for commercial installations. Boiler ratings, in terms of steam and water radiation and Btu per hour, were given for both hand and mechanical firing. Other essential basic data included grate area, heating surface and minimum furnace volume for each rating.

The new issue, initiated by the Engineering Committee of the Steel Boiler Institute, enlarges the scope of the recommendation by including a simplified and uniform list of ratings for oilfired residential steel boilers in terms of steam and water radiation and Btu/hour. Minimum furnace volume and minimum heating surface are shown for these boilers. A method is included to determine the steam, water and Btu net ratings for residential boilers, stoker-, hand-, and gas-fired. The simplified lists for both types of boilers will result in substantial reductions in variety. The revised edition is effective from January 1, 1950.

Copies of R157-50 are for sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C., for 10 cents each, with a discount of 25% on orders of 100 or more copies.

Dr. Winslow Awarded ASHVE Anderson Medal

DR. C. E. A. WINSLOW, editor of the *American Journal of Public Health* and professor emeritus of public health at the Yale School of Medicine, has been selected as the 1949 recipient of the F. Paul Anderson medal of the American Society of Heating and Ventilating Engineers, New York 10, N. Y., for "outstanding contributions in the field of heating, ventilating and air conditioning."

The award, established in 1930, is presented to ASHVE members in recognition of notable scientific achievement or outstanding services. Nominations of candidates are submitted to a committee of five, which makes its recommendations to the society's Council, where the final choice then is made.

Alfred E. Stacey, Jr., president of the Society, is to make the award at the banquet on January 25 during the group's 56th annual meeting in Dallas, Texas.

New Products and Services In *Journal of Commerce* Book

TO FAMILIARIZE the businessman with the new products to be launched in 1950 by business firms, *The Journal of Commerce* has compiled "New Products and Services." Containing information on more than 1,000 items, the study lists 750 of the leading manufacturers and their 1950 marketing innovations, cross-indexed by name and address as well as product.

The compilation, designed to acquaint the businessman with the new products and services that he may be able to use, sell or compete against, can be secured from *The Journal of Commerce*, New York 15, for 50¢ each.

OHI Directors Vote for Chicago Show in 1951

DIRECTORS OF OIL HEAT INSTITUTE, meeting at New York on January 10, voted to hold an Oil Heat Exposition at Chicago in 1951, and authorized headquarters to investigate a convention city in the East for 1952. No announcement has been made of the location of the Chicago show, but it is believed probable the exposition will be held on Navy Pier with the convention headquarters at the Palmer House. Announcements of exact location and time probably will be made after the next meeting of the directors at Philadelphia in April.

Space for the 1950 show to be held at Philadelphia the week of April 24, was 86% sold on January 24, with new reservations being made constantly, according to C. F. Curtin, secretary and show manager. Convention plans are not yet sufficiently complete to announce. "Present space sales and indications of interest on the part of manufacturers and dealers points to the largest and most successful show the Institute yet has held," Mr. Curtin reports.

OHI directors also approved continuance of its contract with the Plumbing and Heating Industries Bureau for the year ahead.

In his report for the Distribution Division, Fred Haab requested a sales manual for the oilheating industry designed to aid dealers in competition with gas. It also was pointed out that local dealer groups, notably the Oil Heat Association of Maryland, have started cooperative advertising campaigns to sell the advantages of oilheating in their areas. The Baltimore group has established a schedule to raise $40,000 for the initial campaign, and placed their first advertising in the *Sun* on January 16. The copy cites 126,347 present users of oilheat in the Baltimore area; and sells oil as the dependable, economical home heating fuel.

Plans of other oilheating groups are not yet far enough advanced to announce, but it is belived that a number of campaigns will get under way in the near future.

The only membership application voted on at the directors' meeting was that of Automatic Devices Co., Chicago, and the firm was elected to membership in the Accessory Division.

A nominating committee was named consisting of George E. Hochstein (Heil) chairman, Paul K. Addams (Fitzgibbons), H. M. Brundage (General Electric), Fred C. Haab (F. C. Haab Co.) and Harold H. Wilkinson (Herco). The committee will report its nominations for directors at the next meeting of the Board at Philadelphia, April 24.

Members of OHI *Exposition Committee meeting to plan for the National Oil Heat Exposition and 27th Annual Convention in Philadelphia, April 24 to 28. Seated, l. to r.: T. A. Crawford, general manager, Timken Silent Automatic Div.; A. T. Atwill, president, Quaker Mfg. Co. and president, OHI; J. W. Owens, executive vice president, Mercoid Corp.*
Standing, l. to r.: L. A. Casler, Casler, Hempstead & Hanford, Inc.; P. K. Addams, president, Fitzgibbons Boiler Co. and F. C. Haab, president, F. C. Haab Co.

Britain Continues Refusal Of Oilburning Installations

GOVERNMENT POLICY has been repeated on the subject of substitution of fueloil for coal in public buildings in the refusal of the Secretary of State for Scotland to authorize oilfiring in a Fife hospital. The County Council has been pressing for the installation of oilfiring since February 1948 and has been repeatedly refused by the Ministry of Fuel and Power and now by the Secretary of State for Scotland.

Ministry policy is that oil fuel shall only be granted where its use will give exceptional economic advantages or where the use of other fuels is impracticable. The advantage of oil fuel is admitted in certain circumstances but in this case cost was estimated at 50 per cent above mechanically fired coal.

The position has now developed here, as in many other consuming points where Government policy is banning either the introduction of oil firing or the operation of relative tests. Consumers are being forced back on to poor and expensive coal and are being forced, at the same time, to subsidize the nationalized coal industry.

Ignoring this latter aspect, although the advantage to the Government is obvious, the policy at least prevents a competitive showing of oil's potentialities as a fuel. Government policy, remaining as it is, there is however, little prospect that this situation will change in favor of oil in the immediate future.

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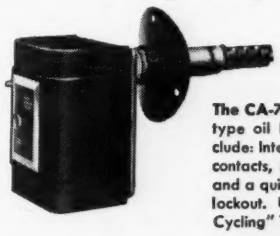
Timed Cycling is a sales natural—because it virtually eliminates the many heating discomforts your customers had accepted as inevitable. This remarkable thermostatic development automatically adjusts the operating periods of the burner—holding room temperature constant within a fraction of a degree regardless of icy winter winds, outside temperature or solar radiation. Pioneered, developed and perfected by DETROIT engineers, the *Timed Cycling* thermostat, in combination with other superior DETROIT controls, provides the finest in heating control systems—far surpassing other systems now in use. Take advantage of this marvelous sales opportunity by telling your customers about this latest advance in heating control. It's another DETROIT achievement—bringing greater comfort to your customers and greater profits to you.



The CA-701 is a primary safety control for pressure type oil burners. Its many field-proven features include: Intermittent ignition, double-break bridge type contacts, low voltage protection, simple construction, and a quiet relay. Safety warp switch assures positive lockout. Use in combination with No. 411 "Timed Cycling" Thermostat.

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Curing Feed Line Troubles

MORE THAN TWO YEARS AGO, a service man we were quizzing broke down and confessed that seldom if ever did he clean the oil strainers in some fuel units of the burners he services.

Once he had this off his mind, he declared that certainly he was having much more trouble than if he cleaned these strainers regularly. Right then he had two jobs with pumps whining loudly because, probably, the fuel unit oil strainers were practically tight-plugged, he said. Loss of prime on outside jobs often was caused by plugged strainers. Chronic nozzle plugging could be blamed on the same thing.

Whenever he got around to taking apart some fuel unit strainers, or was forced to it because the burner simply would not run otherwise, the strainer surely was tight-plugged.

Why was he putting a blot on his own reputation, besides making oil heating show up poorly in scores of homes, by failing to clean these strainers regularly?

"Every time I take apart the strainer of certain fuel units," he complained, "I get in an awful mess. Mostly, because I haven't with me the dozen kinds of parts I need for a wide variety of fuel units. Then, of course, some old burners have separate suction or feed line strainers, not built into standard fuel units, and I haven't the parts for these either. The strainer I've taken apart needs a new screen or new gaskets, it turns out, and I haven't with me what's needed. Often the strainer cleaning job is awful messy because the design artist behind the strainer didn't facilitate regular, easy strainer cleaning; the job might take two hours. Then again, after taking apart and cleaning a strainer, often in a week I get a callback because it's dripping. There are just too many headaches and heartaches in getting out and cleaning all the strainers on my customers' burners that need cleaning!"

The advice this service man received worked out beautifully for him, just as it had for a dozen other men who faced the same problem.

Here it is. First, find a suction line strainer or filter you really can love because it is the tops in design, is tremendously effective for ending nozzle plugging trouble, and above all is a

fueloil & oil heat Short Short Article on Burner Service

pleasure to tend to properly once a year. Locate a filter or strainer you can get a kick out of cleaning in a neat way inside of 15 minutes.

Second, buy and stock three or four dozen filters or strainers of this type. Obtain plenty of spare parts. From then on, keep plenty of complete units and spare parts in your car. You're never going to be caught without them.

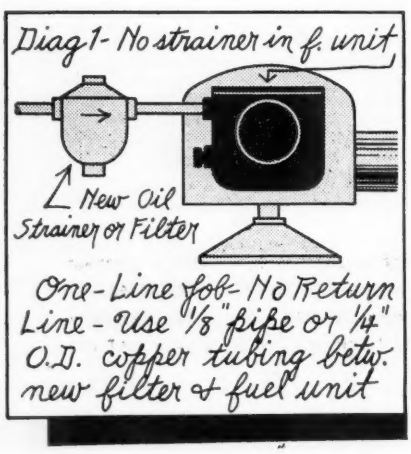
Third, one by one, sell your customers on the idea of letting you install this particular make and model of strainer or filter, for your aim is to wind up with exactly this unit on every job you service. Your big sales arguments include the point that this modern, neat, highly effective filter or strainer will be tended to by you each fall at a minimum of effort. You won't have to fuss an hour cleaning it. The quick, easy regular attention you will then give the filter or strainer will keep the burner in better condition, less likely to break down, more efficient in its use of fuel, and more like new than if grit, sludge, and gum were feeding into the oil pump, nozzle, and pressure regulator and shut-off valves. Remember that even the shaft gland of a fuel unit pump, which is expensive to repair once it develops a leak, often is damaged by grit that can be stopped by a highly effective strainer or filter.

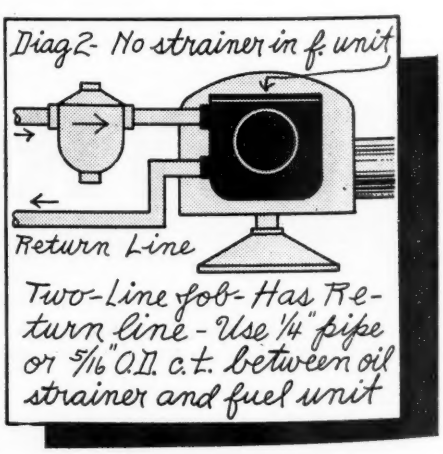
Fourth, make it easy and simple for you to install quickly and neatly the strainer or filter units you sell. Have with you the small fittings you will use. Develop your own standard layout for adding the unit, using either small size copper tubing or ⅛" pipe for inside tank jobs and ¼" pipe fittings for outside tank jobs. These sizes are minimum, of course.

Fifth, when you install your pet filter or strainer, remove from the old burners or old fuel units the strainers it's been a headache to clean. The big idea is that, once you've modernized the oil-handling on all your jobs according to your own ideas, the only oil line filter or strainer you'll have to clean will be your pet. You've selected that one because for one thing it's a pleasure for you to clean it. Besides, you are never going to be caught without spare parts for that one.

This system for turning a headache into a pleasure, and a profitable pleasure at that, has been working for a number of years for smart service men who've got what it takes to recognize a good thing and see it through. The best part of the thing is that it winds up with reduced service expenses for the customers, as well as more efficient and more dependable burner operation.

Fueloil suppliers searching for opportunities to improve their customer's enjoyment of oil heating can use this same wrinkle to excellent advantage. Such companies can't do much more for their customers than (a) reduce yearly service expenses, and (b) eliminate plugged-strainer troubles.

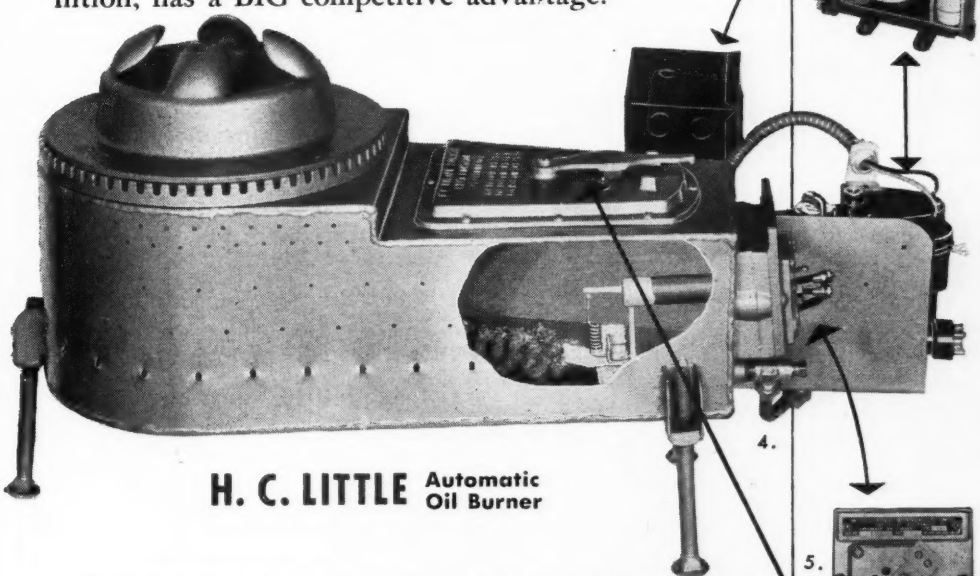

Diag 1- No strainer in f. unit
New Oil Strainer or Filter
One-Line Job- No Return Line - Use ⅛" pipe or ¼" O.D. copper tubing betw. new filter & fuel unit


Diag 2- No strainer in f. unit
Return Line
Two-Line Job- Has Return line - Use ¼" pipe or 5/16" O.D. c.t. between oil strainer and fuel unit

Here's Why *H.C.Little* Means Steady Volume, High Net Profit

Steady volume, minimum service and high net profit are enjoyed by H. C. Little dealers. Public preference for H. C. Little FULLY AUTOMATIC operation with NO PILOT LIGHT clinches sale after sale.

Look at the simple controls... follow the operation cycle... see for yourself why the H. C. Little oil burner, with automatic *self lighting* electric ignition, has a BIG competitive advantage.



H. C. LITTLE Automatic Oil Burner

Vaporizing type oil heating equipment is widely accepted as most practical for heating the typical home. Of all vaporizing oil heating equipment, H. C. Little is the only complete line with these three unique features:

1. Automatic self lighting electric ignition—NO PILOT LIGHT.
2. Catalytic heat control that gives improved burner performance and lower fuel bills.
3. The oil burner designed on the Progressive Low Temperature Carburetion principle, to eliminate high temperature "cracking".

By playing up these features and using them in competitive selling, H. C. Little dealers maintain steady volume at fair prices and insure high net profit.

Address inquiries regarding dealerships to Dept. 11.

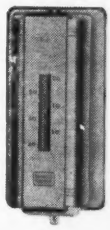
H.C.Little Burner Company **SAN RAFAEL, CALIF.**

Or contact the Factory Representative nearest you:

Baltimore, Md.
Belmont, Mass.
Boise, Idaho
Chicago, Ill.
Columbus, Ga.
Detroit Lakes, Minn.
Fayetteville, No. Car.
Kansas City, Mo.
Larned, Kansas
Newark, N. J.
Portland, Oregon
Prescott, Ariz.
Reno, Nevada
Salt Lake City, Utah
Seattle, Wash.
St. Louis, Mo.
St. Petersburg, Fla.

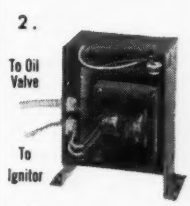
POWERFUL SALES BUILDING STORY TOLD IN SIMPLE CONTROL & OPERATION CYCLE

1.



ROOM THERMOSTAT, actuated by temperature drop, makes electric circuit through...

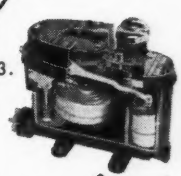
2.



AUTO-TRANSFORMER, which supplies proper voltage to (a) open the automatic oil valve and (b) heat the electric ignitor.

3.

HEAT MOTOR on top of oil valve opens slowly, allowing oil to flow to the burner.



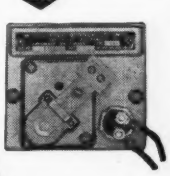
4.

Oil enters burner at relatively cool end and thus is prevented from high temperature "cracking". The soundness of this H. C. Little "Progressive Low Temperature Carburetion" principle has been demonstrated in more than 160,000 installations over a 22 year period.

5.

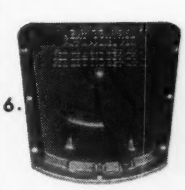
3-VOLT ELECTRIC IGNITOR in bolted-on burner door becomes hot and ignites the oil.

THERMATIC DOOR automatically admits additional air to facilitate quick, easy starting WITHOUT mechanical air induction.



6.

CATALYTIC HEAT CONTROL regulates supply of air through roof of burner as flame increases after starting. Complete carbon-free combustion with catalytic oil is achieved and flame burns above the top burner ring inside combustion chamber.



7.

When required room temperature is reached, the thermostat contact breaks and THE BURNER IS COMPLETELY SHUT OFF. THERE IS NO PILOT LIGHT OR LOW FIRE STAGE. This is true, fully automatic operation, a big competitive advantage!

Boiler on the Roof Heats Stores, Apartments, Offices

HEAT AND HOT WATER for three stores, four efficiency apartments and nine business offices in the Leu Building, University City, Mo., are supplied from a penthouse on the roof. When a druggist signed a lease for a store in a building that was only in the design stage—and demanded maximum basement storage space when the blue prints called for only a partial basement—drastic changes had to be made in the plans for heat and hot water. The solution was found by shifting the steam and hot water plants to the roof of the two-story building.

One of the problems involved was to prevent excessive heat loss and possible fire hazard due to heat radiated from the bottom of the refractory combustion chamber provided for the oilburner. Consulting engineer Harry P. Wilson suggested a specially constructed insulated foundation to prevent undue loss of heat to the floor. Hollow tile was laid on the penthouse cement floor and covered with a course of firebrick. This provided a rigid, insulated foundation for the boiler and combustion chamber, yet allowed free passage of air for ventilation.

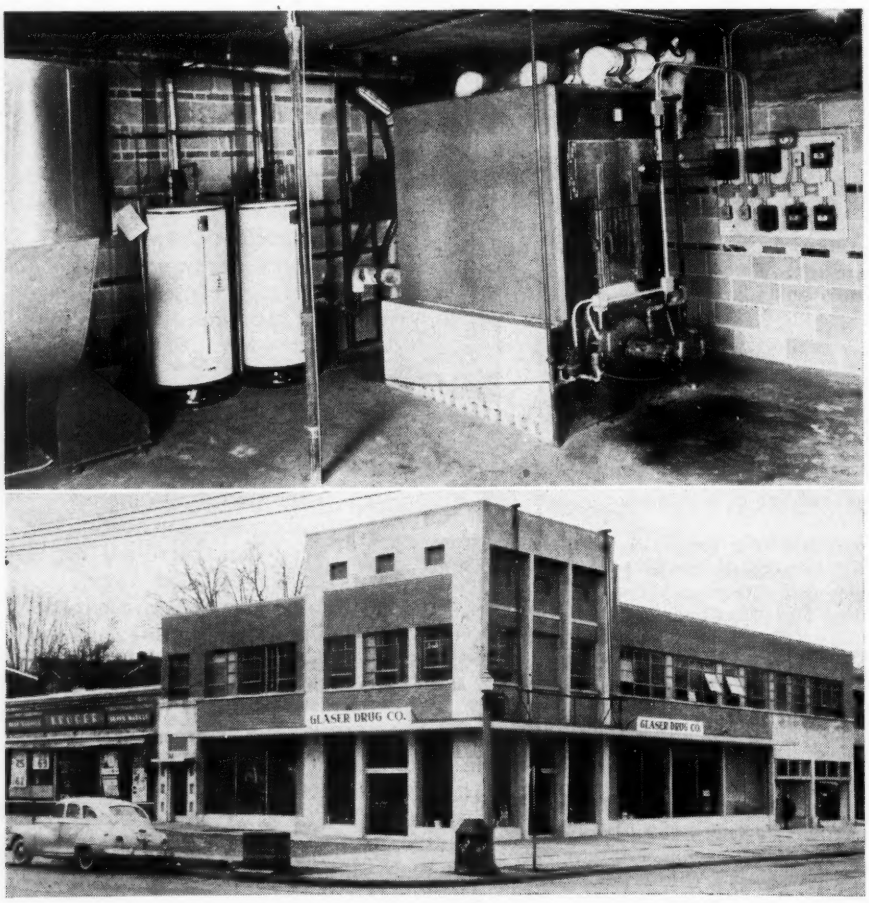
To eliminate the high stack temperature ordinarily required to furnish sufficient natural draft for a boiler the size of the No. A-408 National Heat Extractor, an induced draft fan was installed. This permitted adequate draft with a 7 in. diameter stack which extended only 5 ft. above the penthouse roof.

In the late weeks of the 1948-49 heating season the boiler pressure control was set for an operating range of from one to five pounds. This low pressure steam is fed to convectors in the second floor offices through a zone control modulating steam valve. It also supplies steam to individually thermostatically controlled unit heaters in the smaller stores. The Glaser drug store, which has a thermostatically controlled summer-winter conditioning unit, was also supplied from this boiler which is rated at 4,000 sq. ft. of installed radiation.

The problem of returning condensate to the boiler was solved by installing a pump in the basement.

A 2,000 gallon below-ground tank buried adjacent to the Leu Building stores the No. 5 fueloil for the Petro oilburner.

The National Radiator Co. supplied the oilburning boiler through distributor Becker Marsden Co., St. Louis, and reports the building owner is pleased with the installation and the economic operation—and Glaser Drug Co. enjoys its unobstructed and commodious storage space in the basement.



Penthouse boiler room *(above) contains all utilities for the building shown below.*

Building Awards At All-Time Record Highs

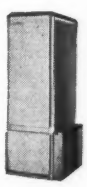
RESIDENTIAL BUILDING awards during 1949, according to the F. W. Dodge Corp., New York 18, N. Y., reached an all-time record of $4,239,386,000, 17% more than that reported for the previous year. Private residential awards increased 13%, while awards for residential building by government agencies climbed 109% over the previous year and added 4% to the over-all residential volume increase.

There was a marked upswing in multiple-housing awards last year, apartment house contract volume totaling $1,121,641,004, 59% higher than in 1948. Single family houses, built to owners' orders, showed a 10% increase and single family houses built by operative builders for sale or rent climbed 8% during the year.

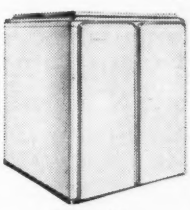
Contracts awarded for building and engineering works in thirty-seven states east of the Rocky Mountains totaled $10,359,250,000 to register a 10% gain over 1948 and establish a new all-time dollar volume contract record. Nonresidential volume for the year reached $3,643,909,000, heavy engineering awards advanced 15%, with private engineering contract volume increasing 50% and public engineering reflecting a 9% gain.

You have the *Answer* to *Any* Heating Problem with *Luxaire's* Complete Line of Warm Air Heating and Air Conditioning Units

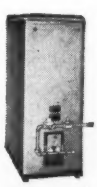
Series A
Gas-Fired
Steel Air Conditioning Unit with Vestibule and hinged door.



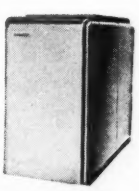
Series H
Gas-Fired
Utility Air Conditioning Unit. Available with Steel or Cast Iron heating element.



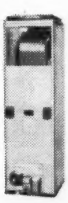
Series CA
Gas-Fired
Air Conditioning Unit, Cast Iron heating element.



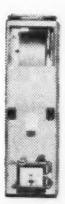
Series G
Gas-Fired
Gravity Furnace. Available with Steel or Cast Iron heating element.



Series O
Gun, Oil-Fired Air Conditioning Unit. Steel heating element.

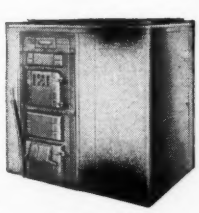


No. VHC-75-E
Vaporizing Oil-Fired Counter-flow Unit.



No. HC-95-E
Gas-Fired
Counterflow Unit.

Series VA
Vaporizing Oil-Fired
Air Conditioning Unit.
Steel heating element.



Series AC-F
Coal-Fired
Air Conditioning Unit.
Steel heating element.

Series No. 700
Coal-Fired
Gravity Furnace.
Steel heating element.

Because! *Luxaire* BUILDS a Unit for *Any* Requirement

Whether the Installation is Large or Small there's a *Luxaire* built to meet the Requirement

★ ★ ★

Whether it's COAL · GAS or OIL there's a *Luxaire* engineered to fit the Requirement

★ ★ ★

Whether it's CAST IRON or STEEL *Luxaire* Builds Both

AND HERE'S A MOST IMPORTANT FEATURE THAT MAKES *Luxaire* THE OUTSTANDING LINE OF HEATING EQUIPMENT

Most Luxaire Gas Fired Units are readily converted to Oil Fired Units by substituting the Luxaire Oil Burner.

Also—Luxaire Oil Fired Units can be converted to an A.G.A. approved Gas Fired Unit by substituting the Luxaire Gas Burner.

THE *Luxaire* C. A. OLSEN MANUFACTURING COMPANY • • ELYRIA, OHIO

HEATING & AIR CONDITIONING UNITS

fuel oil & oil heat

Teaching by Hand

STUDIES concluded in 1947 by Lincoln Technical Institute, Newark, N. J., showed that many veterans and other young men, many of whom had not completed their high school education, were interested in learning oilburner service and installation.

This survey resulted in a list of potential students, but could they obtain work? Lincoln knew there were numerous help wanted ads in the papers for oilburner service men they wanted to know what industry had to say.

Leading manufacturers and key local dealers were then contacted with extremely gratifying results. Letters from distributors; dealers, and others had statements like these in their reply:

"As a manufacturer of oilburning equipment we can say that the course you are about to announce is something that is badly needed by the trade and industry."

"There is no question but what there is a need for better trained service and installation men."

"Especially that phase concerned with better trained installation and service men. There is a crying need for men in the oilburner field with the know how."

With these letters and the response from men wanting training, Lincoln Technical Institute set-up a training unit for oilburner installation and service men of 400 clock hours of instruction.

"Learn by doing" is the keynote of the course. The student is introduced to the field by a down to earth talk of—furnace cleaning—dirt—late hours—early morning emergency calls—unreasonable customers—etc. After the first day, 10% of the students quit and most of the white shirts disappear and the old army clothes or coveralls are the style.

A year of operation revealed that most students needed more time on the electrical and theory end of the course of study. The course was then increased to 600 clock hours divided into 4 sections of 150 hours each:

1—*Theory*—Basic Math.—Terms—Principles — Heat Loss — Blue Print reading — Boilers & Furnaces — *Class 135 Hrs., Shop 15 Hrs.*

2—*Electrical*—Physics—Basic Electricity—Controls—*Class 50 Hrs., Shop 100 Hrs.*

3—*Shop Class* — Fuel Systems — Burners — Chambers — Draft — Testing Equipment—*Class 55 Hrs., Shop 95 Hrs.*

4—*Boiler Shop*—Installation—Service—*Class 10 Hrs., Shop 140 Hrs.*

Total—Class 250 Hrs., Shop 350 Hrs.

Andrew W. Ferguson is chief instructor of the Oil Burner Division and has been associated with the heating field and vocational education for many years. During the war years Mr. Ferguson was Supervisor of Vocational Education in Bergen County, N. J., and later field engineer for Northern Air Conditioning Corp., Newark.

Instructor Fred Richenberg of Nutley is in charge of the boiler shop—Uncle Fred has 40 years' experience in plumbing and heating and is a member of the Master Plumbers Ass'n.

Instructor Jack Armstrong is actively engaged in the heating field under the name of Delta Engineering and has over 15 years in the heating field.

Instructor Joseph Ullman has been field service man for several large distributors and has over 12 years' practical experience in the trade.

The instructors are men who qualify through many years of practical experience. And in addition, the school has a teacher training program which instructors must attend for 4 hours bi-weekly.

The course is set-up to cover just the domestic heating field. The equipment consists of 15 training spaces in electrical shop, twenty-one boilers or furnaces in the boiler shop with various type burners to match the units. Vapor or pot type burners, high pressure, low pressure, and rotary are part of the group.

Many manufacturers have sent field men to lecture and demonstrate to the classes principally in the control field. A few manufacturers have loaned charts or slides showing their particular product but comparatively few of these have been made available by industry.

Students attend from many far away places, traveling many miles to attend classes. Round trips of 75, 100 and 135 miles do not stop students and as a rule, attendance among the long distance travelers is perfect. At present, the student body includes resident students from North Carolina, Florida, and Ohio.

"Learn by Doing" has been profitable to over 200 graduates now engaged in the oilheating field.

General views *of shop and classroom sessions at Lincoln Technical Institute, Newark, N. J.*

beat competition!

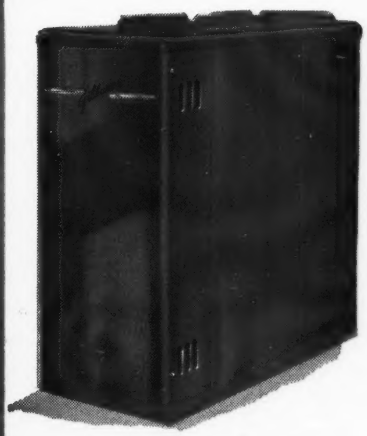
with this fast-selling complete line of warm air heating equipment

by Gilbarco

easy to install!

space-saving modern design!

more profit opportunities!

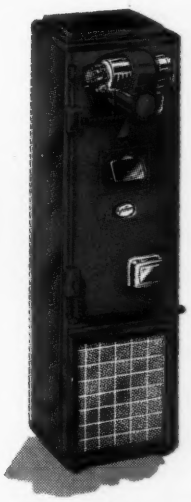


Gilbarco Warm Air Conditioners

Easy to install, economical to run. Compact design with attractive finish for extra sales-appeal. 4 conveniently sized models, 100,000 BTU to 225,000 BTU.

Warm Air Furnace For Ceiling Suspension

Designed for low cost installation, low cost operation in homes, garages, service stations, stores and similar buildings. 3 SIZES, 100,000 BTU, 150,000 BTU and 200,000 BTU.



Vertical Floor Model "Space Saver"

100,000 BTU capacity. Occupies less than three and one half square feet of floor area. For installations where space is at a premium. Built for *efficiency PLUS!*

Learn about GILBARCO's complete modern line of Heating Equipment. Valuable territories are open west of the Appalachians. Write today for full information.

Gilbert & Barker Manufacturing Co.,

Gilbarco

West Springfield, Mass.—Toronto, Canada

the Oil Burner with the Economy Clutch

"... on this dotted line"

Fundamental Techniques of Closing the Oilheating Sale

by
R. F. Horan

LET IT BE UNDERSTOOD at the beginning of this discussion of the technique of closing a sale that there are no sure-fire words or phrases; no fool-proof act, and no combination of the two that will always get the order. In the close, as in the approach and presentation, the salesman is dealing with an individual or group of individuals, and what appeals to one may be of no interest to others. However, there are certain principles that must be observed, and it is these principles we will discuss here.

The close, like the approach and presentation, is a psychological process, but since it is the final step in the direct sale it calls for direct action NOW, and requires careful calculated handling to be successful. In the approach the salesman has created confidence. He has become a trusted acquaintance of the prospect. In the presentation he has engaged in an educational process; has taught facts. As the presentation comes to a close with the prospect in agreement on the fact, the company, the product and the salesman, it is time for *decision to act,*—not just *decision.*

No Prospect Wants To Buy

There are a few fundamentals of human nature that the salesman must recognize as constant. One of the most fundamental is that no prospect wants to buy anything NOW. By definition, a specialty sale is one that the prospect did not intend. He had no thought of buying when the salesman first approached him. He did not know he wanted the specialty until the need and desirability was pointed out to him. Commodities, by contrast, are the things people recognize they need. They will buy a pound of coffee, a newspaper or a necktie whenever they feel the need, but it is basic that the purchase will be delayed as long as possible. Check with your hat store on straw hat sales. Men know that on May 15 or June 1 they are going to lay away that hot felt for a new straw hat, but sales peak up on the day custom says the season opens. Notice the lines of people buying their automobile tags on the last few days before the old ones expire and the rush to get a March 15 postmark on income tax returns. Man in the mass would rather have the cash in his pocket as long as possible than the equivalent value in merchandise, though he knows he is going to make the purchase.

Successful salesmen recognize this trait of human nature. They study their closing technique in this light, and are not surprised at any attempt or excuse the prospect may made to delay the purchase. They accept it as natural and count the exceptions as out of the ordinary. It is the salesman's job to plan his close to meet this expected attempt to delay—even for a few days or hours.

There are three main factors that influence the closing of any sale. These are:

1. The nature of the product or business.
2. The size and importance of the sale.
3. The intellectual or educational level of the prospect.

The first two factors are somewhat inter-related. You would not expect to sell a bridge to a city on the first call, or to negotiate a contract to build a new home for the prospect without preliminary steps to create confidence, educate the prospect and let him investigate your character, reputation and ability to perform.

Under the second factor, you would not expect to make a call back to sell a magazine subscription, a potato peeler or a brush. The smaller the unit of sale, the less time you can afford to spend on the one call. The approach, presentation and close must be made in a routine manner and the salesman must be on his way to the next door.

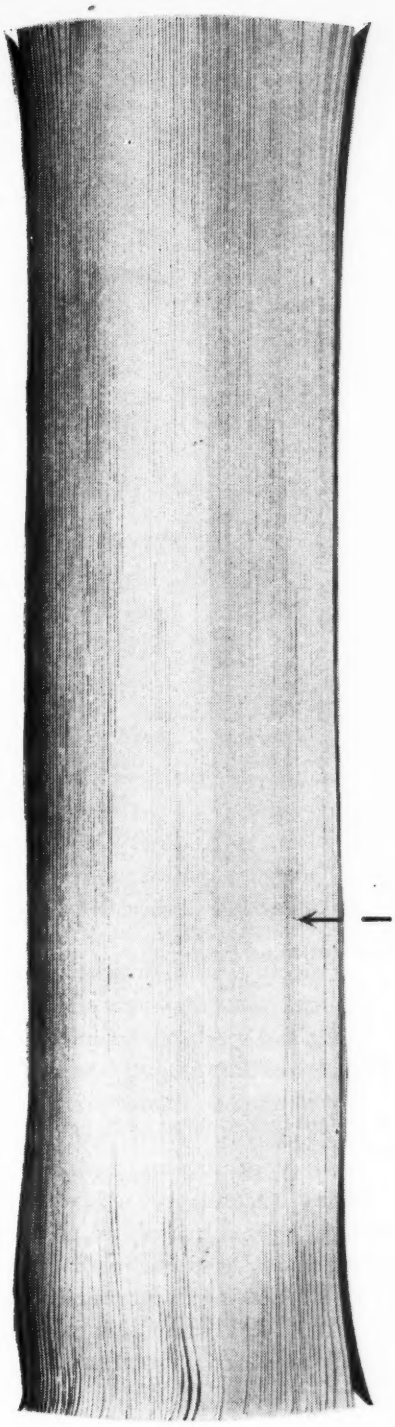
The intellectual and educational level of the prospect will determine the kind of appeal that will be most effective. The finer technical points of the electric refrigerator may be totally lost on a harried mother who would understand and appreciate the absence of a drip pan and the elimination of mopping under the ice box. The engineer may be much interested in the manufacturing methods under which your oilburner is made, or the chemist may demand oil specifications, but grandma, left alone all day to tend the fire, may have no interest except the effect of those basement stairs on her lame knee. In short, the appeal that sells is the one to use out of the many your produce or service may offer. Time given to others is more likely to bore and confuse the prospect than sell him.

Selling Techniques Have Changed

In the oilheating business we have seen a gradual change in selling technique over the years as oilheating acceptance has grown. It has been my personal opinion that the actual change has not been as radical as the change in some selling methods would indicate, but some change must be admitted.

During the earlier days of oilheating all sales were built-up sales. We found every single prospect, spent plenty of presentation time to educate him carefully on the facts concerning the oilburner or unit, and closed as soon as we felt we had the prospect prepared for it. As oilheating acceptance became more general; as more people understood the basic facts of oilheating from advertising and from talking to friends and neighbors, we began to feel the oilburner had become a commodity with some considerable degree of ready-made demand. The fruits of our selling in former years had ripened during the war years to produce some commodity-type buying in the postwar period. This heightened the impression oilheating had become a commodity, with the result that more and more consumer advertising is aimed at the direct sale.

It is true that many more of our prospects now come from advertising and from recommendations of users than in our early years, and this type of lead

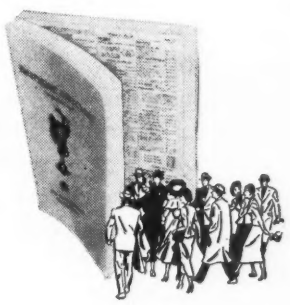


What's so important about YELLOW?

Yellow, when it's the 'yellow pages' in the Classified section of the telephone directory, means just one thing to the people in your community . . . "Here's where I can find who sells it."

The 'yellow pages' are at the elbow of practically everyone in town, *all* day . . . and *every* day. Surveys show that 9 out of 10 shoppers reach for them when they're ready to buy. With your business and your sales message appearing under all important classifications, the 'yellow pages' can be an important builder of new business.

BUYERS REACH FOR THE 'YELLOW PAGES'



FOR FURTHER INFORMATION, CALL YOUR LOCAL TELEPHONE BUSINESS OFFICE.

BELL SYSTEM

AMERICAN TELEPHONE & TELEGRAPH CO. AND ASSOCIATED COMPANIES

fuel oil & oil heat

has to be handled differently than the built-up sale. Inquiry prospects get relatively little presentation, it being assumed that they have some knowledge of oilheating or they would not have made the inquiry, so salesmen feel they must brush over their presentation quickly, hammer home the close and get on to the next prospect. This is the technique of the one-call sale, and though it is necessary in door-to-door selling of egg-strainers, it hardly fits the requirements of a $400 to $1,000 oilheating sale. It is only a thought, but perhaps if we had sold our customers more completely and thoroughly in recent years there would be less avid acceptance of gas today.

Being realistic, it is possible to get an order in less time from the call-in prospect, though the backbone of the business must remain the better class of prospect that does not shop or answer newspaper ads. We know that the call-in prospect is shopping; that he probably has asked for bids from other oilheating dealers, and that he is further along in his acceptance of oilheating than the built-up prospect. Therefore he probably can and should be closed as quickly as possible. There is no time for a survey and a call-back with a written proposal. Competition is on the job. Something caused these people to take the initiative. The salesman moves in, makes a quick survey, a short presentation and drives hard for the close. This may well be his only opportunity.

Size Up Prospect Quickly

The usual technique with the call-in prospect is to size him up quickly to find what his interests are and what makes him tick. Why did he call in? Why does he think now that he wants oil heat? What is his position in the mental scale? Education? Temperament? The salesman has had no opportunity to become acquainted with the prospect as he would if he were building up this sale. He must make a quick estimate of these factors and give the man as much presentation as he thinks necessary, and then drive for the close. The less astute the prospect, the sooner he will be ready to close.

Driving a call-in prospect to the close requires that the points be made as direct and spectacular as possible. Find the factor that is uppermost in the prospect's mind — economy, troublefree, time of installation, tank location, usability of present furnace, or low price—whatever the factors appeal most to the prospect should be given special and emotional stress. If it happens to be the labor-saving feature of oil heat, make it emancipate the whole family. No more tedious trips to the basement for mother, but more time for her to devote to the loving care of the children and her invalid mother-in-law. If there is a calculated saving of $38 a year, talk about it as a 9.5% return on the $400 investment. "Where else can you get such interest on your money? Not at the bank. Not on an insurance policy. Usury rates on the money invested, plus carefree comfort for the whole family."

"Now, Mr. Prospect, it is obvious we can't guarantee this price beyond this month. You know that labor and materials are increasing in price. At this time of year we could make your installation within a reasonable time, too, and later it would be more difficult. Now let me see, (looking in his date

LYNN
POWER OIL BURNER

Lynn's Exclusive "Spiral-Ex" head

Model I F

NEW!
DIFFERENT!
BETTER!

LYNN'S "SPIRAL-EX" HEAD

Lynn's new exclusive "Spiral-Ex" head—designed to burn 100% catalytic oils as well as present blended oils—is a distinct advance in oil burner engineering, reaching a new high in clean combustion and efficient operation. The Lynn burner is easy to install, easy to service. Five models provide a complete line up to 15 G.P.H.

Write for information about desirable open territory for distributors and dealers.

LYNN PRODUCTS COMPANY
Box 531 Lynn, Massachusetts
Manufacturers of Oil Burners Since 1922

Completely modern, attractive in design, and beautifully laid out, the new 210-family Grover Cleveland Apartments in Forest Hills, New York, are equipped with dependable Spencer Boilers. *Builder:* Ben Okun; *Heating Contractor:* Soling Heating and Cooling Company; *Architect:* Philip Birnbaum.

WIDE SELECTION

You have 76 different models to choose from, ranging in size from 290 to 42,500 net load, steam.

LOW STACK TEMPERATURE

You can rely on Spencer's low stack temperature and special peaked firebox to give the very best results with whatever size or type of oil burner you plan to install.

EASY INSTALLATION

You will appreciate the *flexibility* that Spencer offers—adaptability to front, rear, or side installation of oil burner units.

QUICK STEAMING

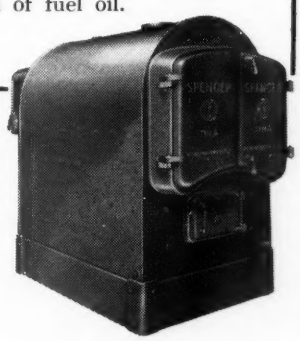
You can assure owners of immediate heat whenever they need it. Special built-in coils provide instantaneous service hot water.

MINIMUM REPAIRS

You can be sure that Spencer heavy-duty construction throughout means extra dependability, extra trouble-free service.

CLEAN HEAT

Special Spencer firebox construction aids complete combustion and assures clean, efficient utilization of fuel oil.



Constructed in accordance with ASME requirements. Fully approved by the Steel Boiler Institute.

For better apartment heating, specify Spencer

When planning fuel oil installations for apartments—and other types of residential or commercial structures—you'll find many advantages to specifying Spencer for heat and hot water. Note *(at left)* just a few of the many reasons why Spencer has earned an outstanding name among fuel oil men and owners alike.

For further details on the complete line of Spencer Boilers, write, wire, or telephone today.

SPENCER
HEATER
LYCOMING-SPENCER DIVISION
WILLIAMSPORT LYCO PENNSYLVANIA

THERE IS A SPENCER for every building, for every fuel

For homes, small buildings.....29 models
For small apartments, light commercial uses.....13 models
For large apartments, heavy commercial uses.....34 models

fueloil & oil heat

book) would Mrs. Prospect be at home on Thursday so we could set the tank?"

If there is any indication of hesitancy at this point the salesman should demand that the prospect call users who can testify to the type of work the firm does, the quality of the burner and its installation, or such other factors that seem to be bothering.

One important thing the salesman must remember on this type of sale: Don't leave the prospect. Stay and stay and stay. Keep repeating the features that seem to impress the prospect most. Don't give up. Repeat your arguments again and try to get agreement on where you should put the thermostat, or what day would be convenient to start the installation. Repeat your features again and ask how he wants to finance the deal. "There is no need to start payments until November under our summer plan, Mr. Prospect, but if you would like to handle it some other way we will be glad to make the arrangements for you. How soon would it be convenient for us to set the tank?"

Review the sales points, cite names and addresses of users who can testify to their accuracy, and try again for agreement on starting the installation. *But the salesman must stay.* If he leaves he probably will not get another chance to call back on this project.

Developed Sale Is Different

The developed sale—that which the salesman has built-up for himself—usually does not require the hammer-and-tongs closing technique so necessary with the call-in lead. This is the best type of business and constitutes the majority of present day sales. The salesman has found the prospect, has taken him through the presentation and now turns toward the close. As with the other type of close, it is emotional and calculated to get action NOW. Simple decision to buy is not enough; the salesman wants the order before he leaves.

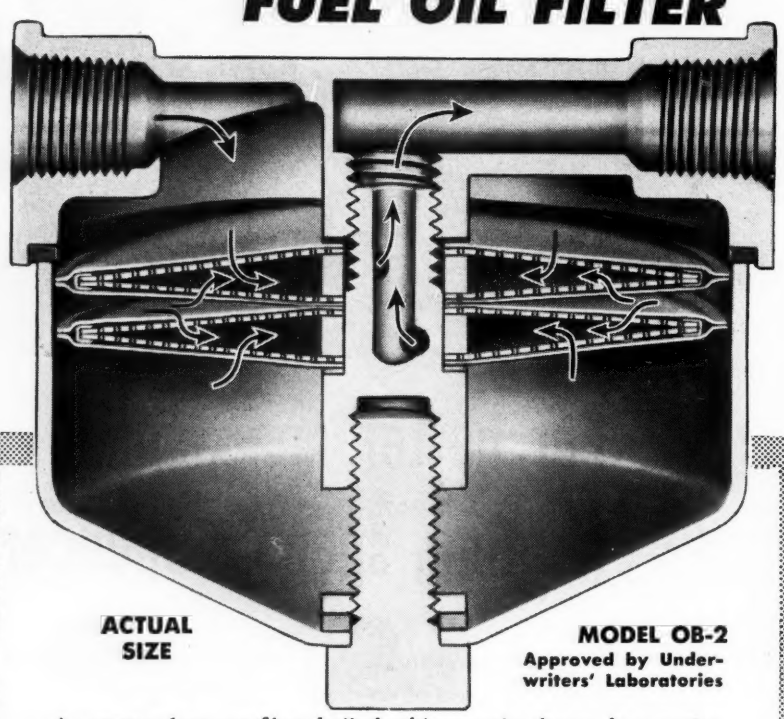
If the prospect never has lived with oil heat, the salesman must stress the advantages and comforts and convenience. It is not safe to assume that the prospect knows and appreciates these points, even though he may protest that he does. If he knew and fully appreciated the advantages and luxury of oil heat he probably would have bought long before. The salesman must paint the picture in detail—no furnace tending, no coal dust on the piano, no ashes to shovel and carry out of the basement, less cleaning, more convenience and more comfort. No detail should be missed in this appeal. It is not safe to assume that the prospect or his family have considered every point, or that they know that oil will be delivered automatically and without the necessity to order. Stress complete, carefree, even temperature without any attention or concern on the prospect's part. It is hard to overplay it.

This dramatization is in preparation for the final closing arguments which will be made on the factors that seem to influence the prospect most. It may be there are elderly people in the house who frequently are uncomfortable. There may be a sickly child or a series of colds that arise from uneven temperatures. Possibly the furnace is old or leaky and likely to quit under the strain of the next cold spell. Whatever it may be that makes it urgent to buy now must

A new departure in the principle of Fuel Oil Filtering

SPARKLER

FUEL OIL FILTER



ACTUAL SIZE

MODEL OB-2
Approved by Underwriters' Laboratories

A compact, low cost filter, built for big capacity, heavy duty service. The result of Sparkler's new concepts of design and engineering in the filtration field.

Surface type filtration is employed which provides a much larger effective filtering area within a small space. The non-woven rayon filtering element removes minute particles down to .001-.002 from the oil, separates water from the oil, and eliminates the possibility of loose fibres reaching the nozzle screen. The lower chamber forms a trap for water and heavy dirt and rust particles.

Flow resistance of the rayon filter element is very low with a resulting high flow rate for the filtering area. Each disc has a filtering area of 14 sq. in.

Model OB-2 has a flow capacity that easily handles the oil for a burner heating a 6 to 8 room house for a full season or more. Model OB-4 with four filter discs is double the capacity of OB-2 and Model OB-8 has four times the capacity of OB-2 and is designed for commercial oil burners.

No by-passing is possible because the filtering seal does not depend on springs or other resilient material. Only clean, pure oil can reach the nozzle screen, assuring a correct nozzle spray pattern without sputtering and complete efficient combustion.

WRITE FOR SPECIAL DEALER OFFER

SPARKLER MANUFACTURING CO., MUNDELEIN, ILL.

Member, Oil Heat Institute of America

When you Sell MONCRIEF'S

Complete Line of AIR CONDITIONING UNITS, GRAVITY FURNACES and COUNTERFLOW UNITS

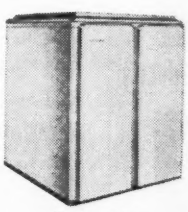
You SELL the Heating Line with *Least* sales resistance!

You SELL the Heating Line that has a unit for *Any* requirement!

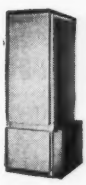
You SELL the Line with *Both* STEEL and CAST IRON UNITS!

You SELL the Line for *ALL FUELS*— GAS • OIL • COAL

Series L
Gas-Fired
Steel Air Conditioning Unit with Vestibule and hinged door.

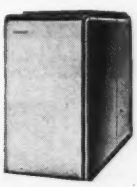


Series CL
Gas-Fired
Air Conditioning Unit, Cast Iron heating element.

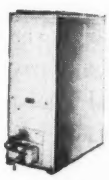


Series U
Gas-Fired
Utility Air Conditioning Unit. Available with Steel or Cast Iron heating element.

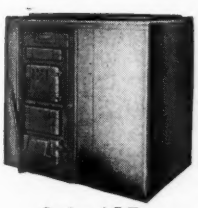
Series W
Gas-Fired
Gravity Furnace. Available with Steel or Cast Iron heating element.



Series P
Gun, Oil-Fired Air Conditioning Unit. Steel heating element.



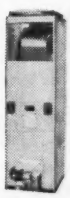
Series VL
Vaporizing Oil-Fired
Air Conditioning Unit. Steel heating element.



Series AC-F
Coal-Fired
Air Conditioning Unit. Steel heating element.

Series No. 700
Coal-Fired
Gravity Furnace. Steel heating element.

No. UC-95-E
Gas Counterflow Unit.



No. VUC-75-E
Oil Counterflow Unit.

THE HENRY FURNACE COMPANY

Medina, Ohio

HEATING AND AIR CONDITIONING UNITS — MONCRIEF SINCE 1895 — FURNACE PIPE AND FITTINGS

be stressed and repeated over and over.

The experienced salesman, keeping in mind the reluctance of people to buy, is not surprised when the prospect sits back at this point and wants to "think it over," or "wait until Fall," or "wait until the first of the month." Nobody ever wants to buy now. They want to wait—even until morning. Here the salesman can use one stock question: "Why?" The salesman knows there probably is no reason except the natural dread of making a decision to buy—the prospect is waiting until the last minute to get the straw hat he knows he is going to buy.

"See me next week," he pleads.

"Why?" the salesman persists. "Why deprive your family of the comfort and the convenience you know they deserve? Why put off this decision until prices rise? Why? Why wait until we are so busy the installation crew will be hurried on the job?"

"I should see the XYZ burner."

"Why? Their 70° is no more comfortable than our 70°. If they give you the same quality of materials we specify there can be no difference in price. Their installation men get the same wage as ours. Why do you want to delay?"

"Let's have a little more respect around here! After all, the president of this firm was once the office boy!"

"I want to think it over."

"Why? I must have missed some point or covered it so lightly you don't understand. The Midtown Heating Company has been in business here for thirty-two years. We are a responsible local firm. You know our reputation, or you can check on it by a call to Mr. Henderson, Main 1358. Why not get this tank set and piping completed before the end of the week? There is time now to do it before the rush starts."

One warning here to the salesman feeling toward the order: Don't stress the signing of the order. Don't make an issue of the act of signing the order. The salesman is trying for an agreement—a consent to start the installation. When the agreement is reached and the details are decided upon, the signing of the order will be a mere bookkeeping transaction. The salesman should not wave his fountain pen and plead for a signature. The signature is not much good without agreement, and signing is only a natural and accepted act after there is agreement. The time of installation, the method of payment, and similar details should be settled first.

In stubborn cases when the prospect continues to stall for time, the salesman should call in the rest of the family to help make the decisions. Going over the points one at a time he gets as many as possible to agree step by step. When there is family agreement on the desirability of an installation, it is hard to put it off.

The one remaining asset the salesman may have is his determination to stay and keep going over his story, nailing down his points and trying constantly for permission to start the installation.

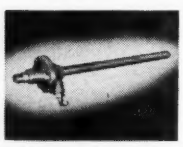
The salesman is there to close. He should stick to the close.

NO OTHER
Oil-Fired Equipment
Can Match Electrol

Complete Line: Oil Burners • Air Conditioners
Water Heaters • Boilers

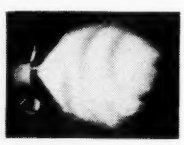
NO ONE HAS THESE EXCLUSIVE SALES FEATURES! ENTIRELY DIFFERENT BURNER!

Cut-off Valve



No other burner has this quick shut-off valve at nozzle. No oil drooling. No fouled nozzles. No after drip. No costly magnetic valves needed. Less service.

Ball Flame



No other burner has this suspended intense flame. Rotating fire never touches wall of chamber. Burns 100% "cat-cracked" oil without adjustment. Cleaner Boilers. Less service.

Master Control

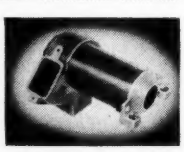
No other burner has a control operating on clean air instead of corrosive flue gases. Burner mounted, wired and tested at factory. No relays. No transformers. Less service.

Thermo-Loop

No other burner has this pure nickel heat exchanger. Operates safety control on pure air. Located right in combustion chamber. Constant performance regardless of flue gas temperature. Less service.

ELECTROL
BURNER MANUFACTURING CO., INC.
Rutherford New Jersey
BALL FLAME

Spiralon



No other burner uses a large expensive casting to deliver air to combustion head. Because of this, no other burner has Electrol's intense flame. Highest alloy flame director. Prevents burnt air tubes. Less service.

DEALERS! You'll find Electrol Easier to Sell! . . . Exclusive Sales Agencies Available! Write Today For Details!

Control

PANEL HEATING JOBS AT LOW COST WITH

TACO PANELTROL

Now, for the first time, Taco offers a low price quality control for panel heating. Taco Paneltrol prevents water going to radiant heating panels from exceeding any setting between 110° and 150°F. even though temperature of water in heating boiler is 180° or higher. It's an adjustable thermostatic control.

MAKES POSSIBLE DUAL TEMPERATURES IN PANEL HEATING SYSTEMS . . .

180° F. WATER IN BOILER

Such temperature permits a Taco heater to supply year 'round domestic hot water.

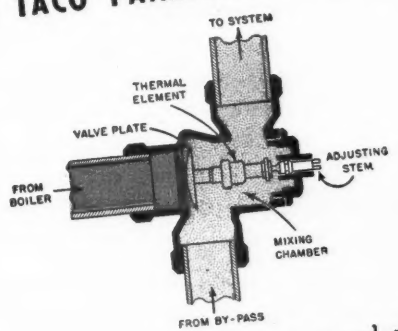
110° TO 150°F. WATER IN PANELS

Set the Taco Paneltrol at water temperature required by system design. No hotter water can get through.

YEAR 'ROUND DOMESTIC HOT WATER SUPPLY

Taco Paneltrol unfailingly controls panel water temperature between 110° and 150°F. regardless of how high the boiler water temperature. So your Taco heater can safely be used to provide year 'round domestic hot water without fear of overheating the panels.

HOW TACO PANELTROL WORKS . . .



Circulator pumps hot boiler water and relatively cool system water from by-pass through TACO PANELTROL. When blended water temperature tends to go above or below the predetermined setting of 110°-150°F., Taco Paneltrol restricts or increases flow of hot boiler water to mixing chamber without creating additional pressure drop.

Better Heating—Better with Taco

TACO HEATERS, INCORPORATED
137 South St., Providence 3, R. I.

NPC Finds Oil Reserve Adequate for All Needs

AMERICA'S OIL RESERVES are adequate to meet all demands of the foreseeable future, and there is now available a reserve productive capacity of 700,000 barrels daily to meet any national emergency, according to the National Petroleum Council's special committee on Crude Petroleum Reserve Productive Capacity which made its report as the newly appointed Council organized January 26, for its fourth year of government-industry cooperative endeavor.

The committee, headed by L. F. McCollum, President of Continental Oil Company, warned that the development of new oil resources and maintenance of the industry's reserve productive capacity would be seriously jeopardized by any change in the provisions of the federal tax laws providing for depletion of mineral resources.

The committee declared that the present reserve productive capacity of 700,000 barrels daily may increase to 1,000,000 barrels in the near future and that, with the application of civilian rationing, a total of 2,000,000 barrels daily could be made available for emergency purposes.

"Twice within the past quarter century the American petroleum industry has dispelled fears of shortages by creating a substantial margin of reserve productive capacity," the report continued. "There is no question that large additional discoveries remain to be made in the United States, and productive capacity can continue to increase. The results in 1948 and 1949 strikingly demonstrated this. As reported by the American Petroleum Institute, additions to proved reserves of petroleum liquids exceeded two billion barrels in 1948. This report is not yet available for 1949, but in its review just now available for 1949, the *Oil and Gas Journal* estimates that proved reserves increased by 1.25 billion barrels. These large additions have been made although production exceeded two billion barrels of crude oil and natural gas liquids in each year."

MONARCH

OIL BURNER ACCESSORIES ARE DESIGNED FOR BETTER PERFORMANCE

Most any nozzle will produce some kind of a fire, but—until you have tried Monarch Stainless Steel Nozzles (of a type with spray characteristics matched to your air mixing equipment) you won't know how good they really can be. Advise make of burner and sketch or accurately describe air mixing head and make test YOURSELF with the series Monarch Nozzles we recommend.

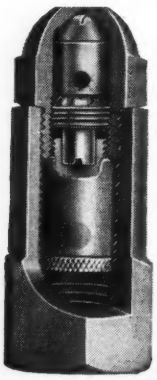
Pulsation: Write for new Circular No. 51849 on our "Anti-Pulsation" equipment.

The G-74 Combustion Head

The Monarch G-74 Head embodies an entirely new approach to efficient means for intimately mixing air with atomized oil to provide a highly efficient controlled flame.

Note these features:

1. Suitable for capacity sizes from .75 GPH to 2.50 GPH.
2. Simple to install and there is no "guess work" about the settings.
3. Price—Less than the cost of a good fuel unit.



F-80

Replacement Valves

Monarch G-49 piston type pressure regulating and cut-off valves are available in models to suit most replacement needs. They can be mounted in any position and piston will not jam from dirt. Contain no bellows or diaphragm to break or corrode. Rugged Brass bodies, with stainless steel pistons.

Write for Catalog D

MONARCH MFG. WORKS, INC.

2503 E. ONTARIO ST.

PHILADELPHIA 34 PENNA.

European Distributor: A. Coutau, Rue de la Scie No. 16, Geneva, Switzerland

British American Completing Canadian Refinery Expansion

A TWO YEAR EXPANSION PROGRAM is nearing completion at the Montreal East refinery, British American Oil Co., Ltd., and when completed the refinery will have a daily capacity of 32,000 bbls. of crude oil, as compared with a former capacity of 17,000 bbls.

Largest of four refineries owned and operated by British American, the Montreal East refinery will serve an area extending from Newfoundland to Manitoba and its products will include gasoline, kerosene, domestic, diesel and bunker fueloils, in addition to a variety of other petroleum products.

The expanded refinery covers an area of approximately 215 acres and includes a tank farm with total storage capacity of 4,500,000 barrels of crude and refined products. Crude from South America is brought through the Portland-Montreal pipeline and by oil tankers, during the navigation season.

British American, founded in 1906, operates in all ten Canadian provinces,

Bigger JOBS FOR Bigger PROFITS WITH

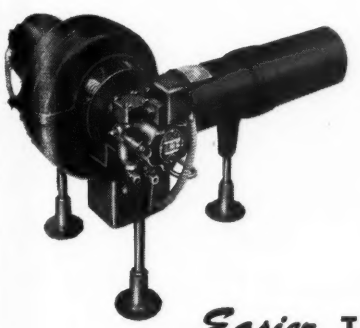
SILENT GLOW

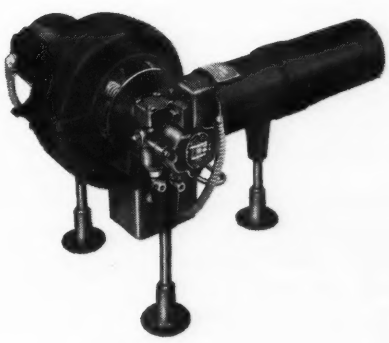
In schools, apartments, hospitals, hotels, churches, stores, etc., there are plenty of profitable business-boosting opportunities for the alert dealer who sells the famous "big five" in the Silent Glow line. *Versatile* . . . with capacities ranging from 3 to 30 g. p. h., you can select the right burner to meet every specific commercial, institutional, or industrial heating requirement. *Easier to install* . . . Silent Glow's simplified installation methods save you time. *Job tested features* . . . assure efficient, economical performance, customer approval.

In 1950, sell the *bigger* jobs with *bigger* profits for you . . . sell Silent Glow!

MODEL 1800
Firing Range 3.00 to 6.00 G. P. H.

MODEL 2800
Firing Range 5.00 to 9.00 G. P. H.

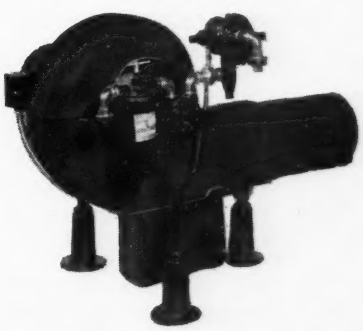




MODEL 3800
Firing Range 8.00 to 13.00 G. P. H.

MODEL 6800
Firing Range 12.00 to 20.00 G. P. H.

MODEL 8800
Firing Range 18.00 to 30.00 G. P. H.



Easier TO SELL . . . *Easier* TO SERVICE . . . *Easier* TO BUY

Those Who Know Choose
SILENT GLOW OIL BURNERS

To: THE SILENT GLOW OIL BURNER CORP.
850 Windsor St., Hartford 5, Conn. • 1500 So. Western Ave., Chicago 8, Illinois

Send us the complete facts about Silent Glow Oil Burners including prices and your money-back guarantee.

Name _____

Company _____

Street _____

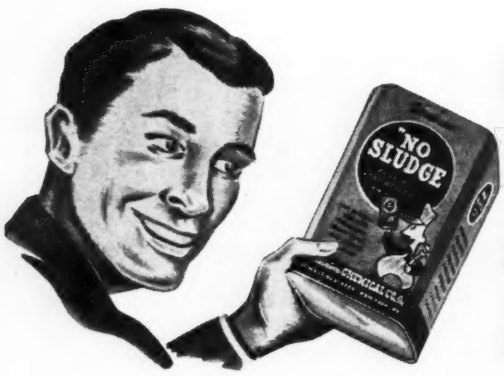
City _____ *State* _____

and, through a wholly-owned subsidiary is engaged in production and exploration in ten states in this country.

Newspaper Reports Coal Shortage In Chicago Area

A CHICAGO NEWSPAPER has reported that beginning early in January hundreds of Illinois, Wisconsin and Indiana householders, within 50 to 70 miles from Chicago, were completely out of stoker coal, could secure little help from local coal dealers and faced a serious threat to the continued use of their heating plants.

The paper intimated that a drastic drop in temperature would compel many suburban householders depending upon stoker coal for heat to close their homes and move in with others using gas or oil heat. Also, it was indicated that residents of smaller towns were preparing to use electric and oil heaters and that schools in a number of communities were faced with the possibility of closing unless their dwindling coal supplies could be replenished.



KEEP HOME FIRES BURNING BRIGHTER!

with "NO-SLUDGE" Fuel Oil Treatment

Impaired combustion, congested fuel lines, and a low output of heat, can usually be traced to an accumulation of sludge in the fuel tank. Sludge forms on the premises and is beyond the control of the refiner. Unless proper steps are taken to disintegrate the layer of sludge—and to prevent it from forming, there will be thousands of heat units lost per every gallon of oil used.

"NO-SLUDGE" Fuel Oil Treatment chemically emulsifies any sludge in the tank. Its continued use prevents new sludge formation. "NO-SLUDGE" puts sludge in suspension—makes it burn with the oil. It clears fuel lines, makes oil flow freely—increases the number of B.T.U.'s, prevents breakdowns and holds service-repair work to a minimum.

Servicing the home owner with "NO-SLUDGE" is profitable. One QUART of "NO-SLUDGE" treats 2000 gallons of oil.

Qualified Distributors Wanted
Write to Department F

Dominion CHEMICAL CO., Inc.
WATER CONSULTANTS AND CHEMISTS
FOR INDUSTRIAL AMERICA
11 WEST 42nd ST. · NEW YORK 18, N. Y.

"I'm sorry we have to let you go, Pritchard, but we need a younger man in your place, so the bowling team voted to get rid of you ..."

U. S. Department of Labor Fueloil Prices (November)

FIELD INVESTIGATORS for the Department of Labor monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various suppliers in each market, the prices are averaged and published. Those in the table that follow were taken November 15 (cents per gallon):

	Range	*No. 1*	*No. 2*	*No. 3*
Boston	13.30	13.12	11.90	..
Manchester	14.20	13.70	12.60	..
Portland, Me.	13.30	13.30	11.90	..
[3] Buffalo	13.94	..	12.93	12.93
[1] New York	..	..	11.83	..
Philadelphia	..	12.02	11.58	..
[1] Chicago	13.20	12.85	11.93	11.93
[4] Detroit	..	13.90	12.88	..
Milwaukee	..	13.30	12.40	12.30
[1] Kansas City	..	11.93	10.91	10.91
Minneapolis	13.17	12.93	11.62	11.93
[1] Baltimore	..	12.04	11.63	..
[1] Wash., D. C.	..	12.51	12.04	..
Jacksonville	..	13.03	12.52	..
Norfolk	..	12.10	11.00	11.00
Richmond	..	12.50	11.22	..
[2] Savannah	..	13.70	12.60	..
[5] New Orleans	..	13.34	12.36	12.36
Portland, Ore.	..	13.94	11.64	6.35
[6] San Francisco	..	13.77	11.44	6.48
[4] Seattle	..	14.77	12.65	6.74

[1] Prices include 2 percent tax.
[2] Inspection tax of one cent per gallon included on kerosene only.
[3] Prices include 1 percent tax.
[4] Prices include 3 percent tax.
[5] Prices include 3 percent tax on all fuels except gas; prices for kerosene and fueloil No. 1 also include one cent per gallon State health tax, and 1/32 of one cent per gallon State inspection tax.
[6] Prices include 3.5 percent tax on all fuels except gas.

Canadian Oil Industry Fears Surplus Problem

DISCUSSING THE POSSIBILITY that the Canadian oil industry might face an acute surplus problem in residential oils, an oil company executive is reported to have admitted that some surplus of heavy fueloils has accumulated in Western Canada. To offset this his company

AUTOCARS

are built for their work

This Model C-70-S Autocar, with 2,500-gallon tank, owned by Fairchester Oil Co., Inc., keeps the home fires burning brightly in Port Chester, N.Y.

Fuel oil haulers have this factor to consider when they buy tank trucks: their units must start each trip fully loaded—and capacity loads of heavy liquids are a tough test. Experienced haulers rely on Autocars to handle the job; they know that Autocars are designed by a manufacturer of trucks exclusively, to meet the requirements of operators who expect low maintenance in spite of peak loads.

Autocar Trucks • *They cost less, because they do more work*

The Autocar Company, Ardmore, Pa. • Established 1897
Factory Branches and Distributors from Coast to Coast

is expanding its western markets for heavy fuel, the executive declares, and points out that, in competition with low cost coal and Alberta natural gas in recent years, there has been large scale conversions to oil in industry from other types of fuel formerly used.

Probably the greatest single new market for the heavy oils is the railways' conversion program in the Prairie region. So far about 300 coalburning locomotives have been or are being converted to oilburning. By the end of this year Canada's two major roads will have more than 350 diesel locomotives in operation, ranging from 600 hp to triple unit 4,500 hp ratings, estimated to indicate an increase in diesel oil sales of 600,000,000 barrels.

◈

Edwin L. Malm has been named manager, hot water and steam accessories div., United States Radiator Corp., Detroit 26, Mich. He has a background of twenty-five years' experience in the heating industry and has held key positions in the sales departments of several well known companies.

Robert J. Neu has advanced to the position of vice president in charge of sales, Monogram Products Co., Philadelphia 4, Pa., manufacturers of refractory combustion chambers.

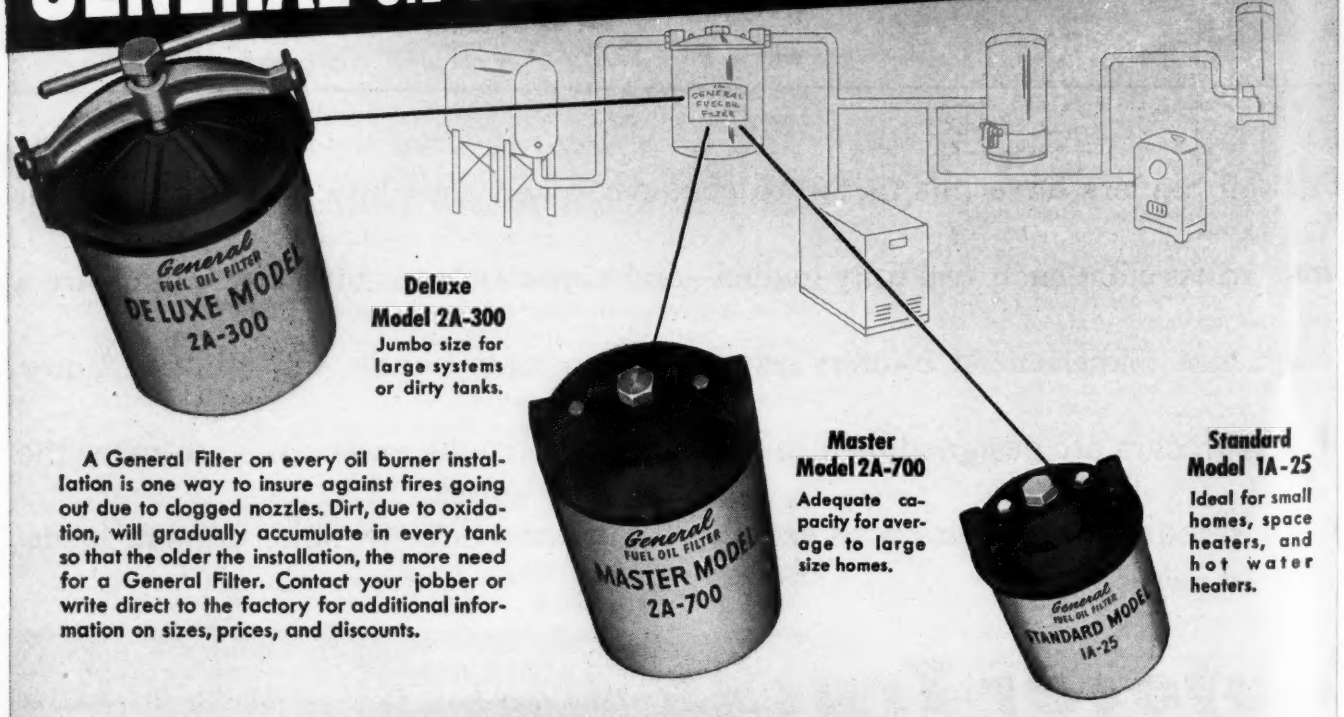
Frank M. Halloran has become manager of the Boston Residential Div., York-Shipley, Inc., York, Pa., to supervise activities of the operating New England distributor branch. Other personnel changes included the appointment of *R. B. Snyder* as sales co-ordinator, Shipley Cooling and Heating Co., York, Pa., sales division of the manufacturer and the naming of *J. C. Hauf, Jr.* to the position of sales manager of the southern region, covering distribution outlets from Baltimore south. All three are long-time employees of York-Shipley.

Harry Horandt has been named Pacific Coast Manager, Neptune Meter Co., New York 20, N. Y. In his new position he will be in direct charge of all sales, office and warehouse personnel in Los Angeles and San Francisco, Cal., Portland, Ore. and Denver, Colo.

Albert C. Crownfield, Jr. has been named factory manager, Silent Glow Oil Burner Corp., Hartford 5, Conn. He assumed his new duties on January 1 and had been employed by the company in an advisory capacity since last summer. His background includes a broad experience in factory and production management with a number of well known concerns. Mr. Crownfield is a member and chairman of the local section of the ASME and is active in the Society for the Advancement of Management.

Mark D. Disoway, for more than twenty years plant manager, Penn Electric Switch Co., Goshen, Ind., died on January 9 after a long illness. He was born in 1885, was a graduate in mechanical engineering from Illinois University in 1908 and joined Penn in 1926. He became factory manager at that time and a director in 1928.

GENERAL FUEL OIL FILTERS ARE SURE FIRE



A General Filter on every oil burner installation is one way to insure against fires going out due to clogged nozzles. Dirt, due to oxidation, will gradually accumulate in every tank so that the older the installation, the more need for a General Filter. Contact your jobber or write direct to the factory for additional information on sizes, prices, and discounts.

GENERAL FILTERS INCORPORATED GENERAL FUEL OIL FILTERS 12890 WESTWOOD AVENUE DETROIT 23, MICHIGAN

CANADIAN FACTORY BRANCH: CANADIAN GENERAL FILTERS, LTD., 2679 DANFORTH AVE., TORONTO, ONTARIO

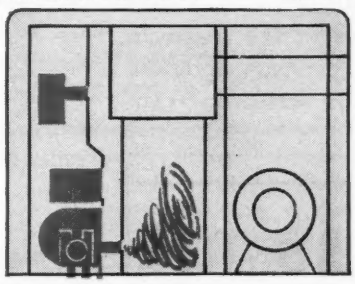
CONCO heat

CONCO's Stepping Out

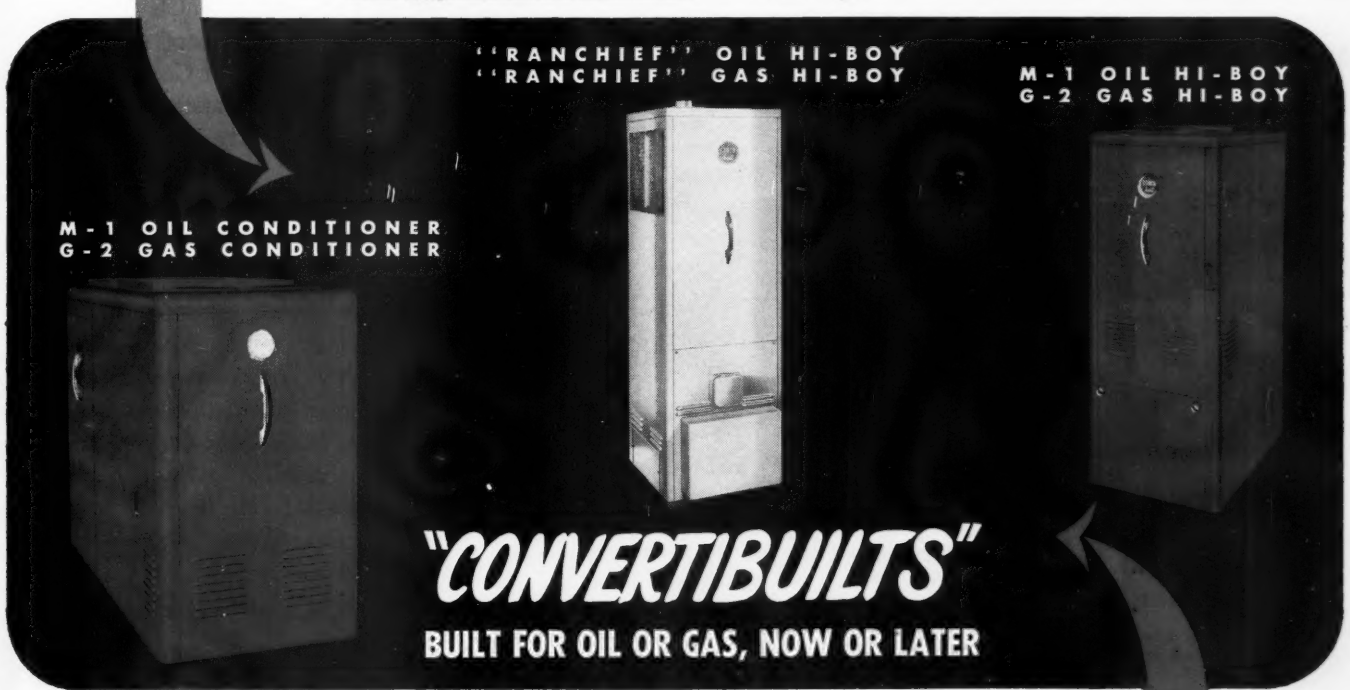
with '50's MOST SALABLE LINE

OIL - GAS - COAL...

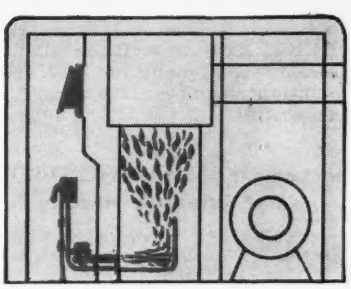
FEATURING CONCO "CONVERTIBUILTS" --- BUILT FOR OIL OR FOR GAS ... NOW OR LATER



OIL-FIRED with the Conco Magic Spray Burner, these beautiful new furnaces provide the ultimate in forced, filtered oil heat. And each unit is designed to carry full U.L. listing for oil firing, as well as A.G.A. approval for gas firing later if desired. A complete, fully packaged, factory-wired line for full sales coverage.



GAS-FIRED with a Conco Monoflame Gas Burner (Manufactured under Roberts-Gordon patents) — as an original or ultimate installation — these same "Convertibuilt" units provide the finest in gas heating. Now offer prospects full freedom of fuel with Conco "Convertibuilts" — designed to burn gas or oil with high efficiency, to accept gas after oil with minimum change.



CONVERSION BURNER

The Conco Magic Spray Burner, finest of conversion oil burners, designed to produce a clean, quiet flame of intense heat from less costly No. 3 fuel oil. In two sizes to cover a wide range of installations.

Step Out WITH CONCO

CONCO ENGINEERING WORKS
Division of H. D. Conkey & Company
Mendota 4, Ill.

Rush me full information on the CONCO-HEAT line and franchise.

My name .....

My address .....

.....

fueloil & oil heat

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Groups' activities to reach the editor by the 18th.

L. I. Terminals Group Elects Officers, Hears Van Cleve Speak

NEW OFFICERS were elected at the January 11 meeting of the Long Island Terminals Association, held at Garden City, N. Y. Perry Morris, Universal Utilities, Inc., Great Neck, N. Y., was named president of the group; John Lewis, Lewis Coal & Oil Co., Port Washington, N. Y., was elected vice-president; Hugo Platte, Roxen Utilities, Inc., Rockville Centre, N. Y., became treasurer and Charles Bennett, L. J. Bennett, Inc., West Hempstead, secretary.

H. B. VanCleve, president, Maritime Petroleum Corp., New York, N. Y., was speaker at the meeting and stated an immediate, organized drive to promote oilheat on the Eastern Seaboard was imperative to safeguard the industry from the inroads of natural gas. Contrasting the 75% of the heating oil sold in the New York area by small retail companies with the virtual monopoly enjoyed by large utilities, Mr. VanCleve warned that, "Individually and collectively we must plow back a portion of our earnings to be used for the creation of public good will."

The independent oil distributors will have to lead the effort initially, but, sooner or later, he continued, the entire industry will have to share the responsibility. He praised the Westchester Oil Trades Association for their campaign to acquaint the public with the story of automatic oilheat and emphasized that their backing came from small independent companies. Mr. VanCleve traced the great expansion of natural gas pipelines scheduled for the East Coast and stated it was fallacious to assume any market in the area would be immune from gas competition.

Massachusetts Group Hears Talk on Credit Problems

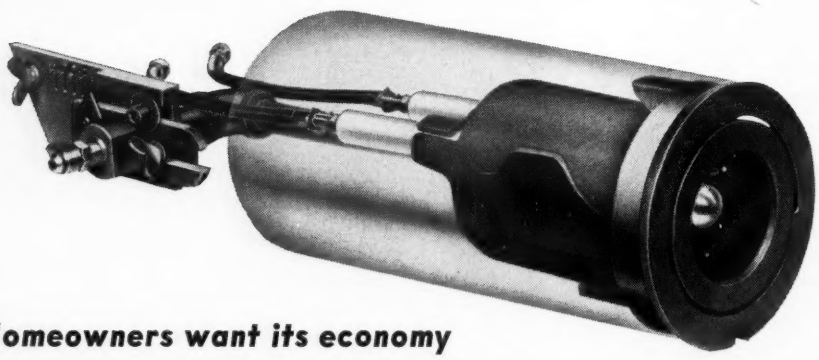
JANUARY 17 was the date and the Lafayette Hotel, Boston, Mass., the site of the 167th meeting of the Massachusetts Oil Heating Association, Inc., Watertown 72, Mass. Max Seltzer, program chairman, presented Arthur W. Nelson as the speaker. He is credit manager, Atlantic Coal Co. and credit supervisor, City Fuel and Staples Coal Co., as well as Kennebec Wharf and Coal Co., Bath, Me.

His subject, "Fueloil Budget Accounts and Your Credit Problem in January," touched upon two phases of the oilburner and fueloil dealers that presently are of prime importance. His talk developed the advisability of encouraging a closer relationship between the sales and credit departments and discussed the possibilities and limitations of budgeting fueloil payments.

D. C. Group Meets; Receives Data on Liability Insurance

THE REGULAR January membership meeting of the Oil-Heat Institute of Greater Washington, Washington 5, D. C., was held on January 17 at the Burlington Hotel. It was a luncheon meeting and featured a talk by William J. Cheyney, executive director, Retail

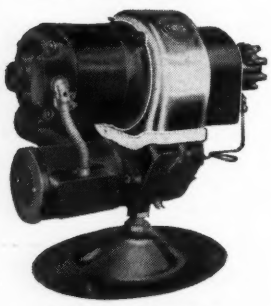
MORE HEAT from LESS OIL with CENTURY's Fuel-Saving Firing Head



Homeowners want its economy when they buy Oil Heating Equipment

It's easy to Sell these Advantages!

- **Fuel economy through better combustion — cleaner fire.**
- **Easy adjustment for any draft condition.**
- **Fewer Service Calls.**
- **Burns all types of domestic heating oil.**



Models: 01 and 02

The new CENTURY adjustable Firing Head is designed to deliver maximum heat . . . efficiently! Positive control of primary and secondary air provides a perfect fuel-and-air mixture to give clean, complete combustion from all types of home heating oils including the newer catalytic fuel oil that is so high in heat units . . . but, ordinarily, so hard to burn.

CENTURY'S new fuel-saving Firing Head is standard equipment on CENTURY Winter Air-Conditioners and Boilers as well as on Conversion Burners up to 5 G.P.H. capacity.

Start now to profit with CENTURY'S Complete Line of Automatic Heating Equipment

CENTURY Winter Air-Conditioners (85,000-380,000 BTU—Utility and Basement Models); Boiler Burner Units (380-740 Sq. Ft. of radiation); Convertible Winter Air-Conditioners (60,000-180,000 BTU—Gas Burner, Gun Burner, Vaporizing Burner); Oil-Fired Conversion Burners (¾-20 G.P.H.); Gas Conversion Burners (87,000-250,000 BTU).

Write today for literature . . . or ask to have a salesman call

CENTURY ENGINEERING CORPORATION

Main Office and Factory • **Cedar Rapids, Iowa**

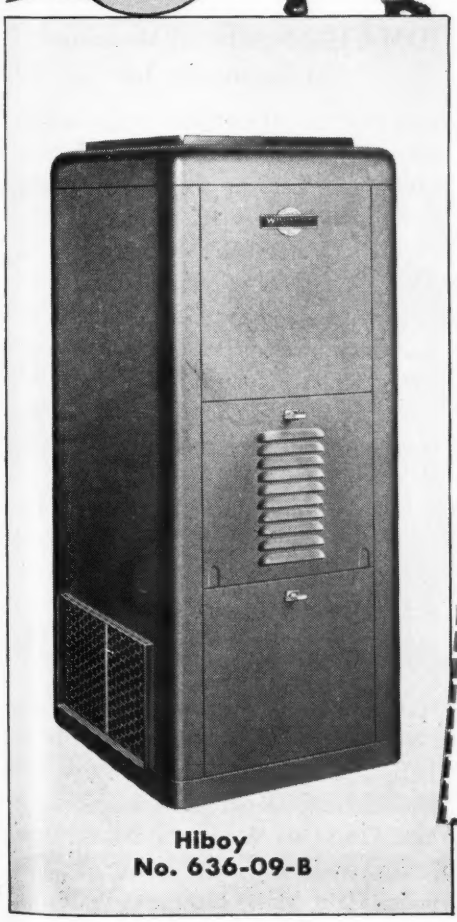
BIGGER PROFITS

GAS-FIRED FURNACES

in the HOTTEST heating field

EASIER INSTALLATIONS

OUR 60th ANNIVERSARY



Hiboy
No. 636-09-B

1—*More "Sell" Features.* Battleship construction, automatic controls, full safety, greater economy, quieter operation, dust free, dirt free, etc.

2—*Priced to Outsell Competition.* Never before so much Quality at rock bottom prices.

3—*Greater Eye and Buy Appeal.* The neatest, most compact and most beautiful "package." Cabinets finished in two-tone (Silver Brown) baked-enamel.

4—*Current A.G.A. Approval.* All units approved late 1949. You sell the most modern units . . . not 1945 models.

5—*Easier Installations.* Reversible furnace sections eliminate unnecessary duct work, factory set combustion units; cabinet panels fit perfectly; fewer bolts and nuts.

6—*Backed by Hard Hitting Advertising* in newspapers and farm journals.

MORE SALES

DON'T LET THIS PROFIT MAKING OPPORTUNITY GET AWAY!

Return the coupon or wire today for Catalog and Prices.

THE WILLIAMSON HEATER COMPANY, Dept. FO
Oakley, Cincinnati 9, Ohio

Please send literature and prices on your 60th Anniversary line of:

☐ **Gas-Fired Furnaces** ☐ **Oil-Fired Furnaces**
☐ **Pipe & Fittings**

NAME_____

ADDRESS_____

CITY_____ ZONE_____

STATE_____

Credit Institute of America. A nationally recognized authority on the subject, Mr. Cheyney's talk covered the current status and condition of consumer credit and speculated on what action Congress is likely to take which may have a direct influence on the consumer's ability to pay.

In an earlier activity, A. Graham Shields, managing director, commented on a tendency on the part of insurance companies to bring suit against dealers who install or service oilburners, where claims have been paid by the insurance company for property damage or personal injury allegedly due to accidents, smoke, smudge and similar conditions. The bulletin, covering the subject, then pointed out that insurance coverage can be provided against these suits under Products Bodily Injury Liability and Products Property Damage Liability. The bulletin concluded with a proposal from a local insurance agent, listing the classifications used in rating this type of insurance, together with rates and minimum premiums charged for basic limits.

FULFLO FILTERS
B4
UL
Simplify your Service Problem!
Fulflo FILTERS
● Make sure every new Burner you sell is equipped with a top-notch FILTER to eliminate all troubles due to impure oil.
● Make sure all outstanding installations you service are equipped with this highest grade FILTER.
● Make sure Cartridges are renewed at proper intervals — on every Burner.
● Make sure you standardize on the FILTER that leads all others in sales because it leads in performance.
STANDARDIZE ON FULFLO!
Fulflo Filter CARTRIDGES
Engineered for Oil-Burner Service. Precision depth filtration. Every drop of oil finely filtered again and again.
COMMERCIAL FILTERS CORPORATION
BOSTON 27, MASSACHUSETTS
WRITE OR WIRE US IF YOUR JOBBER CANNOT SUPPLY YOU WITH FULFLO FILTERS AND CARTRIDGES FOR BETTER HOME HEATING.

Wisconsin Dealers Hold Gas vs. Oil Open Forum

THE REGULAR MONTHLY MEETING of the Wisconsin Oil-Heat Association, Inc., Milwaukee 2, Wis., was the scene of an open forum on the subject, "Oil Heat vs. Natural Gas." The forum followed the usual committee reports and a special report from the advertising fund committee.

The balance of the evening was devoted to the forum, led by L. A. Wollaeger, Wadhams Div., Socony-Vacuum Oil Co.; Alfred Hegeman, Wauwatosa Fuel & Supply Co.; Grover C. Fillbach, Automatic Air Conditioning and Heating, Inc. and Edward Tangney, Cities Service Oil Co. All members present joined in the discussion and question and answer period that followed.

The annual industry rally, sponsored by the Association and held on February 10, had as its principal speaker A. T. Atwill, president, Quaker Mfg. Co. and president, Oil-Heat Institute of America, Inc., New York 16, N. Y. W. O. Spiess, national secretary, Distribution Div., Oil-Heat Institute of America, Inc., is scheduled to be speaker at the association's February 23 meeting.

IOMA Holds Annual Meeting At Boston on January 10

THE ANNUAL MEETING of the Independent Oil Men's Association, Boston, Mass., was held at the Statler Hotel, Boston, on January 10. Horace E. Davenport, George W. Pickering Co., Salem, Mass., was elected president and Wesley E. Downing, State Fuel Co., E. Boston, vice president. Named secretary and treasurer were Robert W. Carney, Carney Young Utilities, Inc., Brighton and Frederick A. Whetton, Whetton's Oil Co., Needham.

Nine members were added to the board of directors, as follows: Alfred Buckley, Buckley & Scott, Inc., Providence, R. I.; Marcel Fugere, Manchester Coal & Ice Co., Manchester, N. H.; Fritz F. Nelson, Petroleum Heat & Power Co., Boston; William C. O'Meara, Pennsylvania Oil Co., Somerville, Mass.; J. Everett Robbie, Quincy Coal & Oil Co., Quincy, Mass.; Richard Tait, Hedlund Coal Co., Worcester, Mass.; Benjamin Waldman, Boston Ice Co., Jamaica Plain, Mass.; George F. Williams,

GOOD SHAPE

to keep *your* business in!

...rners ▪ Quiet May ...
...May Warm Air Furnaces ▪ Qui...
... ▪ Quiet May Boiler-Burner Units ▪ ...
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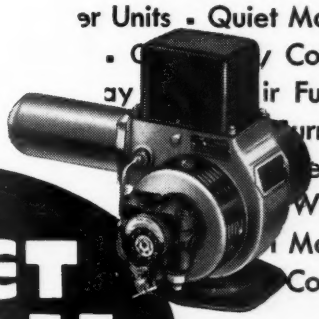


QUIET MAY

OIL BURNER

dealerships available—write now!

MAY OIL BURNER division of Gerotor May Corp., Baltimore 3, Md.

OHI

Petroleum Eng. Co., Springfield, Mass. and John P. Birmingham, White Fuel Corp., S. Boston.

A highlight of the convention was an address, "Facts and Fantasies in Natural Gas for New England," delivered by Joseph B. Wells, executive director of the association.

Petroleum Jobbers Hold Annual Convention and Show

NORTHWEST PETROLEUM ASSOCIATION, Minneapolis 2, Minn., held its 27th annual convention at the St. Paul Hotel, St. Paul, Minn., on January 11 and 12. Twenty-three companies presented product exhibits, augmenting the business and convention sessions held during the two days. Door prizes were awarded from the group of registrants' cards that were submitted initialled by each exhibitor, indicating attendance at each of the booths.

Business sessions were confined to afternoon gatherings on both days of the convention, activities which included an open forum and relevant talks by speakers well versed in their subjects. The entire morning of the second day, January 12, was devoted to jobber consultations with officers and directors of the association.

API Headquarters to Stay in New York

AMERICAN PETROLEUM INSTITUTE has decided to keep its headquarters in New York City and its division and branch offices, with one exception, in their present city locations.

The executive Committee of the Board of Directors took this action in approving the report of a Special Reviewing Committee which had been requested to consider the advisability of consolidating all of the API offices in one central location, and possibly move the headquarters to Washington.

The lone exception affected is the branch office of the Department of Safety currently located in Washington. This unit, headed by Frank Wilson, will be transferred to the main headquarters in New York.

Warm Air Meeting

(*Continued from page 41*)

Meyer, Meyer Furnace Co. and H. F. Randolph, International Heater Co.

Other activities at the morning session included an opening address by retiring president Wise, a report from M. I. Levy, chairman of the publicity merchandising committee and a talk by Howard Hartman of L. J. Mueller Co. on "Credits and the FHA."

The Hon. Robert A. Taft (R), U. S. Senator from Ohio, was principal speaker at a luncheon session on December 14. He emphasized the need for straight thinking to keep this country from socialism, pointing out that England's free medical care costs an exorbitant sum of money through taxation and the people are not profiting from improved medical care. "This holds true in every case where the Government attempts to control the daily actions of the people," concluded the Senator.

During the ensuing afternoon session, Elizabeth Gordon, editor, *House Beautiful*, and a panel of consultants presented the publication's Climate Control research program. The project, based upon the fact that there exist dozens of climate zones in this country,

CHECK YOUR EDCO NEEDS HERE

- ☐ FILTERS
- ☐ NOZZLES
- ☐ VALVES
- ☐ STABILIZERS
- ☐ STRAINERS
- ☐ ADAPTORS
- ☐ INSPECTION MIRRORS
- ☐ SERVICEMAN'S NOZZLE KITS

Complete information yours for the asking.

"Sure I use EDCO FILTERS...

Why wouldn't I—they save my time in servicing and they do a better job for the customer."

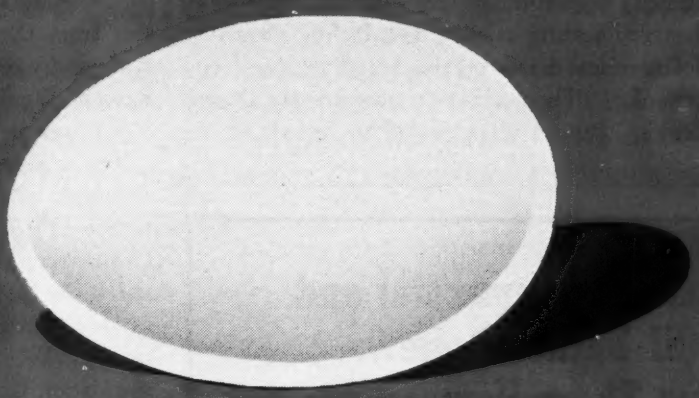
GREATER FILTER AREA means longer cartridge life

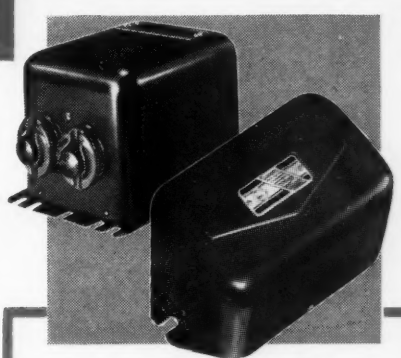
That means fewer call backs, therefore greater customer satisfaction. EDCO oil filters are light weight, sturdily built. Cartridges can be replaced without breaking the oil line. Interchangeable with other makes.

Stock up today or write for literature

EDDINGTON METAL SPECIALTY COMPANY
1050 Czarnecki Street, Eddington, Pa.

LIKE AN EGG





It's What's Inside That Makes The Difference

• The theory of transformer design is well known ... but the engineering skill and ability — the experience gained through the production of millions of transformers — the adaptability to *exactly* meet requirements — the control of manufacturing steps — all these determine what you find inside the transformer case.

Inside the case of every Jefferson Electric Transformer you will find incorporated to the highest degree the art of small transformer engineering, with all that a generation of specialized experience and manufacturing can provide.

Long years of cooperation with engineers in all fields where transformers are used, plus complete production in our own modern plant, permit Jefferson Electric to anticipate and quickly incorporate changing transformer requirements.

JEFFERSON ELECTRIC COMPANY
Bellwood, Illinois
In Canada: *Canadian Jefferson Electric Co., Ltd., 384 Pape Ave., Toronto, Ont.*

Jefferson Transformers are constructed to give long-life performance with minimum maintenance. All materials used are of a selected high quality determined by the Jefferson Research Laboratory. All raw materials—insulation, copper wire, electrical steel, receive frequent tests to guard and maintain Jefferson standards. In addition, chemical engineers personally supervise all vacuum impregnation, moisture proofing compounds, and heat treatments. These precautions plus the liberal design and unexcelled workmanship assure efficient and maximum transformer service.

JEFFERSON ELECTRIC

TRANSFORMERS

fuel oil & oil heat

is designed to furnish data that permit the elements of humidity, rainfall, winds, storm data, fog, smoke and snowfall, all of which affect individual zones, to be manipulated to take a large part of the environmental load off the house and its occupants. James M. Fitch, architectural editor of the magazine, illustrated the factors that affect comfort areas in the United States and outlined their significance to the heating industry.

Dr. L. P. Herrington, director of research, John B. Pierce Laboratory of Hygiene and professor in public health, Yale University, continued the technical discussion in "Climate and the Individual." He stressed the responsibility of the heating and building industries to provide the consumer with the best possible living and working conditions. Concluding the panel discussion was Henry N. Wright, architect and consultant, who specifically pointed to the opportunity for increased warm air heating sales offered by the physiological details obtained from the project.

The session on the morning of December 15 was devoted to reports on the association's research activities at the University of Illinois. R. W. Roose, special research associate in mechanical engineering, spoke on fittings losses in extended plenum for winter air conditioning systems; Norman A. Buckley, special research assistant at the University, reviewed the balance of air and temperature distribution in a winter air conditioning system and M. F. Childs, also from the University, presented a preliminary report of tests conducted in Research Residence No. 3 on the perimeter warm air heating system.

The final session received reports by chairmen of committees. F. L. Meyer reported for the Research Advisory Committee; W. D. Redrup for the Installations Codes Committee and Application Engineering Advisory Committee with C. W. Nessell for the Field Investigation Committee and Dean Lorin G. Miller for the Technical Education Committee.

Sell Cost-Conscious Commercial and Industrial Oil Burner Users... ...Show Them How

To Cut Costs With An Economically Operating

Cleaver-Brooks

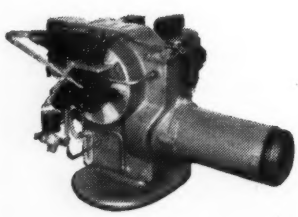
HEV-E-OIL BURNER

USING LOW-COST No. 5 OIL

Quick sales and profits are yours when you offer your customers and prospects a chance to cut operating costs using low-cost, high heat value No. 5 fuel oil.

The economically operating Cleaver-Brooks HEV-E-OIL BURNER efficiently using low-cost No. 5 oil, assures substantial savings to hundreds of commercial and industrial oil-burner users in stores, factories, green houses, apartments, small laundries, cleaners, dryers, pressers, and processing establishments of all kinds.

Write today—for complete dealer and distributor information. Cleaver-Brooks Company, 363 E. Keefe Ave., Milwaukee 12, Wis.



CLEAVER-BROOKS HEV-E-OIL BURNER FEATURES

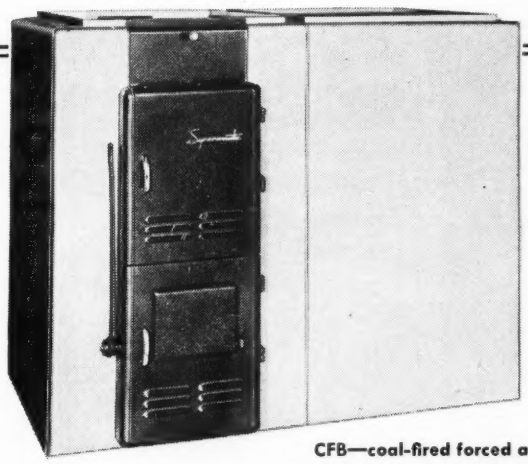
LOW PRESSURE AIR ATOMIZATION • AUTOMATIC ELECTRIC IGNITION • LOW FIRE START • FLAME MODULATION IN RESPONSE TO LOAD REQUIREMENTS • SIZES: 1 TO 40 G.P.H.

VAN-PACKER CORP., Chicago 3, Ill., devotes a 4-page folder to its pre-cast, sectional chimney, approved by Underwriters' Laboratories for all fuels in one and two-story houses. The chimney is a tile lined, insulated, reinforced lightweight masonry chimney, which can be suspended from floor or ceiling. The literature shows typical installations in one story homes with utility room or basement, two story homes, an outside chimney, used with a floor furnace and with a stove in a cabin or garage. A lebelled cut-a-way view illustrates features and method of installation.

BUCKEYE IRON & BRASS WORKS, Dayton 1, Ohio has issued catalog No. 12 on its valves and fittings, including items for bulk plant and fueloil delivery use. The 64-page booklet features an alphabetical index of the products included and contains also a numerical index of the items that are identified with model numbers. Each piece of equipment is pictured, accompanied by a short description and dimensional data. In most cases, it is shown in an exploded or cut-a-way view. A companion piece of literature is devoted to Buckeye oilburner accessories, with data on vent and fill caps, sludge pumps, foot valves, double tapped tank bushings, check and shut-off valves.

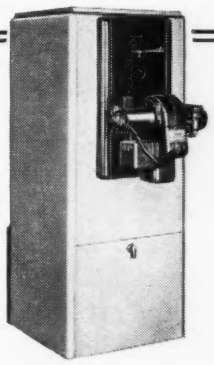
WILSON'S HAIR FILTERS and Syncromatic COUNTER FLOW for higher heating efficiency

In conjunction with its efficient Counter Flow principle of warm air heating, Syncromatic Corporation insures super-clean conditioned air by using Wilson's *Hair* Filters, Honeycomb type, in all units—coal, oil and gas. Wilson's *Hair* Filters mean more cleaned air per filter—maximum cleaning without clogging.



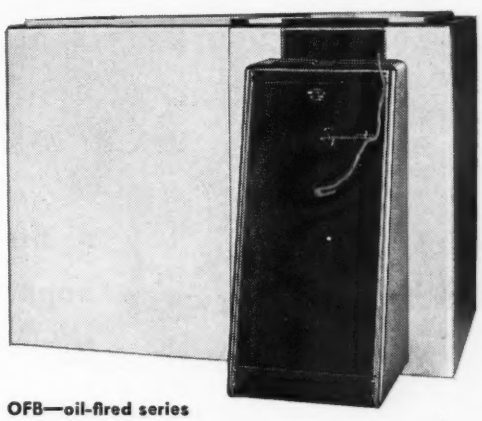
CFB—coal-fired forced air series
Also, coal-fired gravity furnaces

Syncromatic COUNTER FLOW



Oil-fired Hi-Boy

Gas-fired Hi-Boy



OFB—oil-fired series

The famous Edgeseal, the original *Hair* Filter with the patented self-sealing edge.

The popular Honeycomb, the dressed up *Hair* Filter that is so easy to handle.

SAVE DELAY, DOUBT AND DOLLARS

Send for samples with details and prices today. Wilson's *Hair* Filters are another quality product made by Wilson & Co., Inc.—world-famous for superior quality in Meats, Sports Equipment, Pharmaceuticals, Hair Products, etc.

WILSON & CO., INC., (Air Filter Division) 4100 S. Ashland Ave., Chicago 9, Ill.

INDOOR COMFORT

WILSON'S HAIR FILTER

WILSON & CO.

fueloil & oil heat

ASHVE Dallas Show Popular; Avery, Seeley Head Group

LESTER T. AVERY, president of the Avery Eng. Co., Cleveland, was named president; Lauren E. Seeley, dean of the College of Technology, Univ. of New Hampshire, first vice-president; and Ernest Szekely, president of Baley Blower Co., Milwaukee, second vice-president, at the 56th Annual Meeting of the American Society of Heating and Ventilating Engineers at Dallas, January 23 to 26.

Attendance at the convention and show is estimated at 7500. A wide variety of technical papers on heating and cooling problems were presented at sessions covering three days.

G. S. MacLeod, test engineer with Sears Roebuck, and C. E. Evans, formerly with the same company, presented a paper reporting "highly satisfactory" results with baseboard radiators and a simple control system in five houses. The number of rooms heated ranged from five to 14, and occupants from two to six. Three of the houses were oilfired, one gasfired, and one stokerfired. Three were heated entirely by baseboard radiation and two had a little standing radiation.

Temperatures between floor and ceiling varied less than 3° in these baseboard heated houses. This compares with 12° with gravity hot water and standing radiation, and 20° to 30° with intermittent forced warm air observed by the Bureau of Standards in a test bungalow.

K. C. Richmond, editor of *Coal Heat*, was a luncheon speaker on "A Public Relations Problem." "Two out of three dollars spent for heating equipment go for repairs, replacement or modernization." He explained that the heating plant does more "mileage" in every ten days of the heating season than a car does in a year, and with almost no attention from the owner.

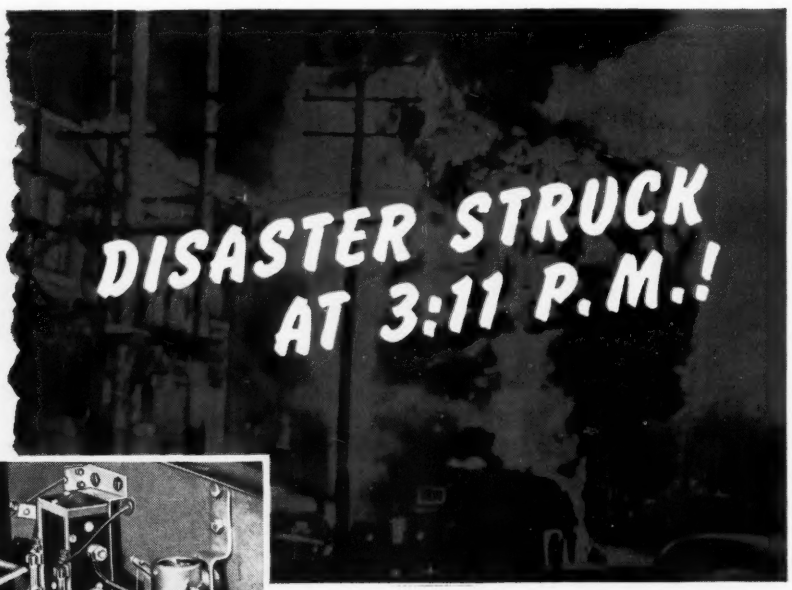
Exhibitors at the Southwest Air Conditioning Exposition, held in conjunction with the meeting, included, Air Devices, Air Maze, Airtemp, Aldrich, American Radiator, Automatic Products, Bell & Gossett, Char-Gale, Coleman, Commercial Filters, Cyclotherm, Detroit Lubricator, Dewey-Shepard, Dole Valve, Doyle, Duo-Therm, Dwyer, General Controls, General Electric, General Filters.

Iron Fireman, Kewanee Boiler, McDonnell & Miller, Minneapolis-Honeywell, Mueller Furnace, Pacific Boiler, Prat-Daniel, Quiet-Heet, Radiant Utilities, Ray Oil Burner, Research Products, Sundstrand Machine Tool, Torrington, Waterman-Waterbury, Webster Electric, and White-Rodgers.

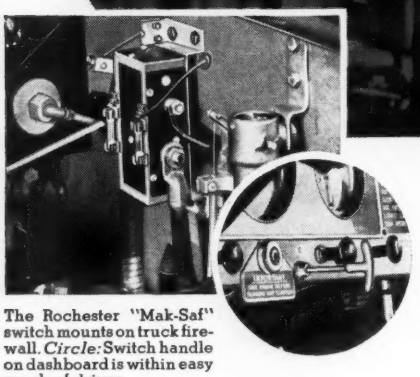
◈

L. A. (Lon) Casler, head of Casler, Hempstead & Hanford, Inc., Chicago, and public relations counsel for Oil Heat Institute of America, has been confined to Wesley Memorial Hospital in Chicago following a serious abdominal operation in January. He is reported making good progress toward recovery and is expected to be back on the job before long.

Stephen C. May has become vice president and general sales manager, Blackmer Pump Co., Grand Rapids, Mich. As such, he will implement a program of expansion of Blackmer's line of hand and power rotary pumps. Mr. May's previous experience includes associations with Pacific Mfg. Corp., Auto-Soler Co. and Iron Fireman.



©Wide World Photos



The Rochester "Mak-Saf" switch mounts on truck firewall. *Circle:* Switch handle on dashboard is within easy reach of driver.

A fire that wouldn't have happened with a "Mak-Saf" truck switch on the job

"Catching fire as it was delivering oil, a tandem tanker burst into flame, destroying two homes, damaging three buildings and causing heavy losses." And, this could happen to your trucks . . . but needn't. At small cost you can install a Rochester "Mak-Saf" (pronounced make-safe) switch on your tankers to positively control and minimize the short circuit hazard.

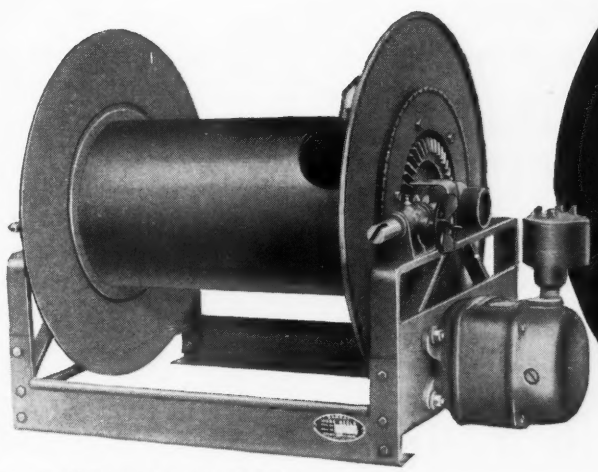
By simply pulling out the "Mak-Saf" switch handle located on the dashboard, the driver can break the electrical circuit in emergencies and for storage. Besides safeguarding costly equipment against fire, it prevents the battery from running down due to any leakage of electrical current.

Motor repairs also can be made safely and quickly without the necessity of removing batteries as a precaution against shock and flash fires. The "Mak-Saf" switch also gives the driver manual control of the generator. Should the voltage regulator go out of adjustment, he can prevent a burn-out by partially pulling out the switch handle, disconnecting the generator field.

"Mak-Saf" switches are foolproof, sturdily made, easy to install and require no maintenance. Send for Bulletin and prices.

ROCHESTER MANUFACTURING COMPANY, INC.
8 Rockwood Street **Rochester 10, New York**
MANUFACTURERS OF LIQUID LEVEL, TEMPERATURE AND PRESSURE GAUGES

NEW . . . the HANNAY HOSE REEL* with Explosion-Proof ELECTRIC MOTOR



REDUCES HAZARDS in handling inflammables and volatiles

*U. S. PATENT No. 2490353
OTHER PATENTS PENDING

- **Especially designed explosion-proof heavy duty motor, Underwriters Approved Class 1, Group D, with permanently lubricated bearings. Motor an integral part of reel; needs no attention.**
- **Can be connected through conduit, for sealed, safe installation.**
- **Sealed push button control; "push" to start; "release" to stop.**
- **Quiet, positive sprocket and chain drive; no gears to shift; no clutch to engage.**
- **Safe rewind speed, always under control.**
- **Smartly designed, compact, durable, dependable.**
- **Simplicity of construction and operation reduces maintenance costs to a minimum.**

AT LAST . . . a new hose reel with truly *explosion-proof* electric motor, developed by Hannay especially to overcome the danger factors previously associated with electrical rewinds. Particularly advantageous for use in fuel oil, gasoline, chemical, fire fighting and similar installations . . . PROVEN SAFE and efficient in exhaustive factory and field service tests. Now available for truck installations in all models except Hannay "16-17" and "14-17" series, in practically every voltage in A.C. or D.C. Ask your dealer for demonstration . . . or write for complete information.

HANNAY
REG. U. S. PAT. OFF.
HOSE REELS
CLIFFORD B. HANNAY & SON, INC.
WESTERLO, NEW YORK

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Everyday Snags

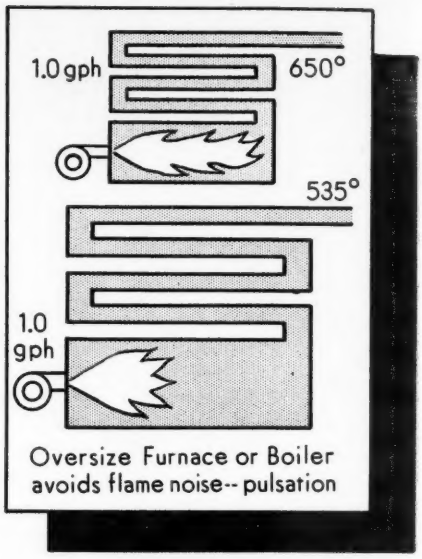
Low-Speed Flues

After spending hours with his two service men trying to end pulsation and flame noise on new installations, a burner dealer who specializes in furnace-duct jobs took time out to complain about the design of modern furnaces intended for smallest oil-heated homes.

First, he said, these small oil furnaces have high-speed flues. The resultant high draft drop leads to starting and stopping pulsation, also to flame noise and pulsation that continues all the while the burner runs.

Second, he went on, these small units have insufficient space above the flames to provide proper gas cushioning for normal operation.

Third and finally according to this dealer, although these furnaces are supposed to give 600° maximum stack temperature, when tested on the insistence of a smart home owner, too often they give 650° or even 700°. To deliver the fuel economy promised a wary purchaser, he wants his furnaces to give stack temperature readings lower than 600° by a safe and dependable margin; 525° or 550° will do for a new, spic-and-span unit. Later the reading will be higher.



Oversize Furnace or Boiler avoids flame noise-- pulsation

He will obtain precisely what he desires if, when ordering a representative make oil furnace, he will order on an oversize basis. To get what he wants in a furnace suitable for firing 1.0 gph, for example, he need but order a furnace rated by its manufacturer for 1.50 gph. Using a firing rate one-third less than the furnace manufacturer intends as maximum will give the dealer low draft drop and low flue gas velocity, ample combustion space above the flame, and low stack temperature. The dealer should make certain the combustion chamber used in the furnace fits the firing rate to be used. He should avoid the disadvantages of a greatly oversize firebox.

Unfortunately, certain dealers who are loud in their complaints about present trends in furnace design are also loud in their protests about paying more for furnaces larger than the smallest made today. That's the furnace manufacturer's side of the story. These dealers may have a hidden desire; they may want a furnace rated at 1.5 gph for the price of furnace rated at 1.0 gph.

Aside from the price aspect, and purely on the basis of the technicalities involved, a furnace rated for 1.5 gph and fired 1.0 gph produces exactly what these complaining dealers desire.

A furnace designer suggests that

FYRITE
Combustion Testing
UTILITY KIT

Pacemaker For Profits from Expert Heating Service

Making the most of your ability to do an expert tune-up job will pay you big dividends in gaining you competitive leadership and neighborhood recognition of your competence as a heating expert. The combustion-testing kit shown here contains precision-made quality instruments with which you can make fullest use of your know-how in making a fuel conservation survey, checking a burner for wornout parts and needed repairs, or running an efficiency test to close a replacement deal.

The kit contains the well-known FYRITE CO_2 Indicator, the versatile MZF Draft Gauge, the all-metal TEMPOINT Stack Thermometer and the sensationally new TRUE-SPOT Smoke Tester. Now, for the first time you can adjust an oil burner quickly and expertly for highest CO_2 without objectionable smoke . . . do away with guesswork, and "hit and miss" fumbling in adjusting for clean firing. The "Scale of Soot" which comes with the TRUE-SPOT tells you the limits of permissible smoke for various burners and types of heating systems. This amazingly simple method of oil burner adjustment is the greatest advance in combustion testing since the introduction of the FYRITE. You will be proud to be among the first to own this "up-to-the-minute" combustion-testing kit.

Ask your Jobber for the FYRITE Utility Kit or write for Bulletin 764

BACHARACH INDUSTRIAL INSTRUMENT CO.
7000 BENNETT STREET • PITTSBURGH 8, PA.

AT LAST!

The fuel oil that won't clog filter screens

The clogging of oil burner screens and filters has for years been recognized as an industry-wide problem. It has been a major cause of burner shutdowns due to fuels.

Finding a means to prevent screen clogging has been a fifteen-year project for Shell scientists. And they have found it!

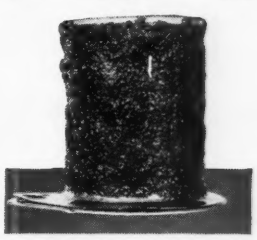
New Shell Fuel Oil containing FOA-5X has proved to be an outstanding success in the best of all tests—three years of actual service. In all the thousands of domestic installations operating exclusively with this new oil, *not a single case of oil burner failure due to a clogged filter screen was reported.*

Because of the anti-clogging property of FOA-5X, Shell Fuel Oil now actually cleans as it heats.

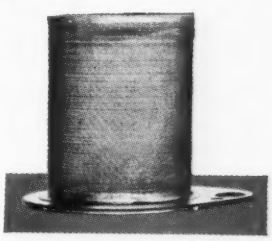
And for good measure, New Shell Fuel Oil with FOA-5X has a powerful anti-rust action which retards the formation of rust and scale in storage tanks.

• • •

This new development is one more significant milestone in Shell's continuing program of Better Oil Heat . . . the program responsible for the Shell-developed Combustion Head, the Shell Smoke Test, and many other contributions benefitting consumer, dealer and manufacturer alike.



Oil burner filter screen after only one month's operation on an ordinary fuel oil.



Oil burner filter screen *after an entire season's* normal operation on Shell Fuel Oil with FOA-5X.

SHELL

New SHELL FUEL OIL with FOA-5X

dealers' emphasis on price may have led to the development of the exceedingly compact new units with high-speed flues, small combustion spaces, and on-the-nose 600° stack temperatures. After all, equipment dealers who dislike the characteristics of the smallest units can stop buying them. Such dealers can buy larger furnaces.

* * *

Frozen Radiator

To save fuel last winter, this home owner turned off the hot water radiators in his guest room and spare room. One of the radiators froze during January.

The pipe fitter who at that time tended to the mess recently asked the home owner if this winter he would again save oil and break a radiator.

"I won't waste oil," the home owner said stubbornly, "and I will have those rooms cold. But I won't pay you again to fix a busted radiator, and I'll show you why."

To prevent the radiators in those rooms from giving out any heat, the home owner had bundled them up carefully in layer after layer of old rugs and blankets. Turned on to prevent freezing, the radiators will give little or no heat.

"It takes you to think up a stunt like that," said the pipe fitter, remembering how the home owner had paid him four months late, after whittling him down $17 at that.

* * *

More On Oil Heating

F. M., Chicago, advances the following ideas to help with the unsnagging of troubles on a heavy oil job.

"A hard day of servicing burners is now ended at two A.M. and I crave relaxation. Found same by reading about a burner which I don't have to service. Subject matter is 'Oil Preheating Problem,' p. 69 of your September issue.

"Assuming this is an invitation to a rush to aid even for those who don't wear monocles, I will continue relaxing by offering some suggestions for ending the trouble at minimum expense. Even though maybe my ideas won't work out in practice, they may give rise to ideas which will help the service man.

"I judge from the way the burner starts that the oil is amply heated by the under-waterline heater. But I believe the heater can't keep up with the influx of the 40 g. cold oil to the 20 heated, resulting in the heater's supplying oil too cool to burn properly.

"With this line of reasoning, circulate the oil through the heater and recirculate it, admitting only so much cold oil as is needed to make up for the oil burned. I think a jumper line from point 'X' to 'Y' in my sketch would do it.

"My basis is that the resistance offered in drawing oil from the heater circuit is less than that drawing oil from the tank, hence the cold oil flow would be curtailed only to replace that which is burned.

"Also you notice I reverse the lines to the pump so as to draw oil directly from the heater to the burner."

* * *

Radio Interference

When a table model radio with a built-in loop aerial tends to buzz when an oil burner ignition spark is on, often the trouble can be ended by turning the radio one way or the other. The loop is directional. By turning the radio, you make certain the loop is aimed away

THE STACK TEMPERATURE REDUCTION
TELLS ITS STORY!
FRANKLAND
DIRECTIONAL FLOW CONTROL
FUEL CONSERVOR
★ Dealers — Here's a Profitable Heating Item! ★
for use with conversion burners
Tell your conversion burner customers about the Frankland Fuel Conservor. It's a money-saving story that will win you lasting customer goodwill, and your sales will get a healthy boost, too. The laboratory-tested and proved Frankland Fuel Conservor delivers hotter, steadier heat because it directs the super-heated gases to the point of contact where they are used for actual heating. The Frankland Fuel Conservor LOWERS STACK TEMPERATURE and brings home-owners savings up to 40% on their oil bills. Economically priced (the Conservor pays for itself within a few months), the Frankland Fuel Conservor is not a baffle, but a directional flow control. Easily installed. Also applicable to gas conversions.
Interested? — Then Write Promptly for Complete Information About This New Heating Sensation.
A few large area warehousing distributorships are still available.
FRANKLAND CORPORATION
2640 GOODRICH AVENUE
FERNDALE 20, MICHIGAN
Scrubbing action against the sides and top of the furnace imparted to ALL the gases insures maximum heat transference to the house, not out the chimney.

...Your Most *Complete* Oil Burner Parts Supply House

***Complete*..... with every item necessary for the installation of oil burners.**

***Complete*..... stocks of all the parts and materials used in servicing oil burners.**

***Complete*..... with the industry's finest rebuilding service on controls, pumps, motors, valves, etc. Guaranteed like new . . . look like new . . . and packaged in new containers.**

***Complete*...is the word for our unequalled catalogue. Over 3500 illustrated items, specifically priced at your cost. This catalogue will save you time and money.**

R. E. MICHEL COMPANY

RICHMOND 20, VIRGINIA BALTIMORE 2, MARYLAND WASHINGTON 2, D. C.

"Everything from A to Z for the Oil Burner"

MAIL THIS COUPON TODAY

R. E. MICHEL COMPANY
1011-1017 GREENMOUNT AVENUE
BALTIMORE 2, MARYLAND

Send me your new 1950 catalogue:

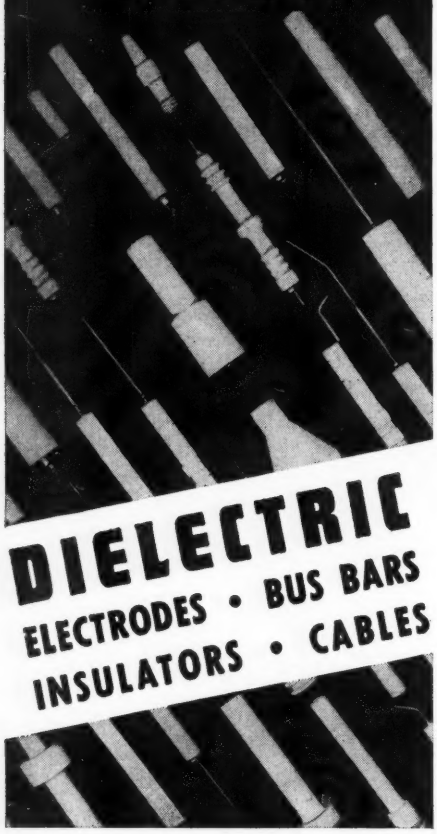
Name .....

Address .....

City ..... *State* .....

NOTICE -- We do not solicit fuel unit repair business or the sale of fuel units or transformers in areas served by authorized Webster Electric and Approved Sundstrand Service Stations.

The Most Widely Used Ignition Assemblies for Oil Burners



DIELECTRIC

ELECTRODES • BUS BARS
INSULATORS • CABLES

STANDARD AND SPECIAL ASSEMBLIES IN ALL TYPES AND LENGTHS

The majority of oil burners being installed or serviced today are equipped with Dielectric electrode assemblies . . . and for good reason—

1—They are made with the finest steatite insulators and electrode tips . . . in any designs to meet specific burner requirements.

2—They have all Underwriters Laboratories, Inc., approvals.

3—Standard assemblies are available for quick delivery.

4—Assemblies with special insulator and electrode sizes and shapes can be made on short notice.

In addition, Dielectric high tension cable assemblies and Dielectric bus bars for transformer and electrode layouts are available for any practical burner hook-up.

Let Dielectric's complete, prompt engineering cooperation help improve your burner and expedite production. Write for bulletin.

DIELECTRIC
PRODUCTS CO., Inc.
125 Virginia Ave., Jersey City 5, N. J.
Boston • Philadelphia • Des Moines

from the source of interference and towards the favorite broadcasting station. If you happen to put the radio in the exact position at which it does very poorly at receiving the desired broadcast, its volume control must be set very high to obtain the desired volume. Setting the control high makes the set sensitive to any interference.

Another effort to reduce or end interference is to switch the plug of the radio to its other position. This is easily tried and sometimes works.

Shortening a wide spark gap makes an oilburner give less radio interference. If the gap has been wider, try 1/8".

Equipping the oilburner with an excellent radio trap of the condenser type is, of course, the best way to end once and for all time any complaints about a spark's causing radio interference.

* * *

Plug-In Jobs

Everyone knows that anyone can install a new M-H Chronotherm, the clock thermostat, in a few minutes by using the plug-in model. You simply remove an old plain thermostat, substitute the Plug-In Chronotherm and make the easy, low-voltage connections for the burner circuit wires, and then plug into a wall outlet in the room to provide 110-volt current for the clock. The big advantage is that the need to do 110-volt wiring in switching to a clock type thermostat has been eliminated.

A service expert says, however, that he can't quite get used to seeing an electric line hanging down from a clock thermostat; he wants no wires visible in the room. Also, he wants the low-voltage clock transformer in the basement.

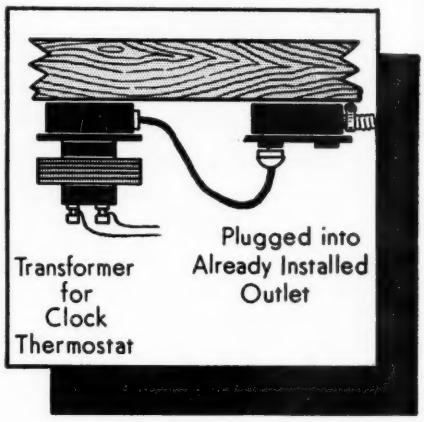
Also, affected now by the advantages of the Plug-In Chronotherm, he does not want to do a major job of 110-volt wiring when he replaces a plain thermostat with a clock thermostat.

In many homes he finds that by using an already-installed basement electric outlet, one always turned on, he can get everything he wants.

In two minutes he can fasten the transformer in place and plug it in. He mounts the regular transformer on a 4" square box provided with an insulating bushing, cord. See diagram.

He draws out the old two-wire or three-wire low-voltage thermostat cable that runs through the wall from the thermostat location to the basement, and while he does this he easily draws through five-wire thermostat cable, hooked to the old cable being removed.

At the easiest, most convenient location in the basement, he connects up the thermostat to the already-installed wires that run to the burner panel. Often the



connections are made near the place at which the new five-wire cable comes out of the wall and enters the basement. Connections for the thermostat part of the clock thermostat are as simple as the connections for a plain thermostat.

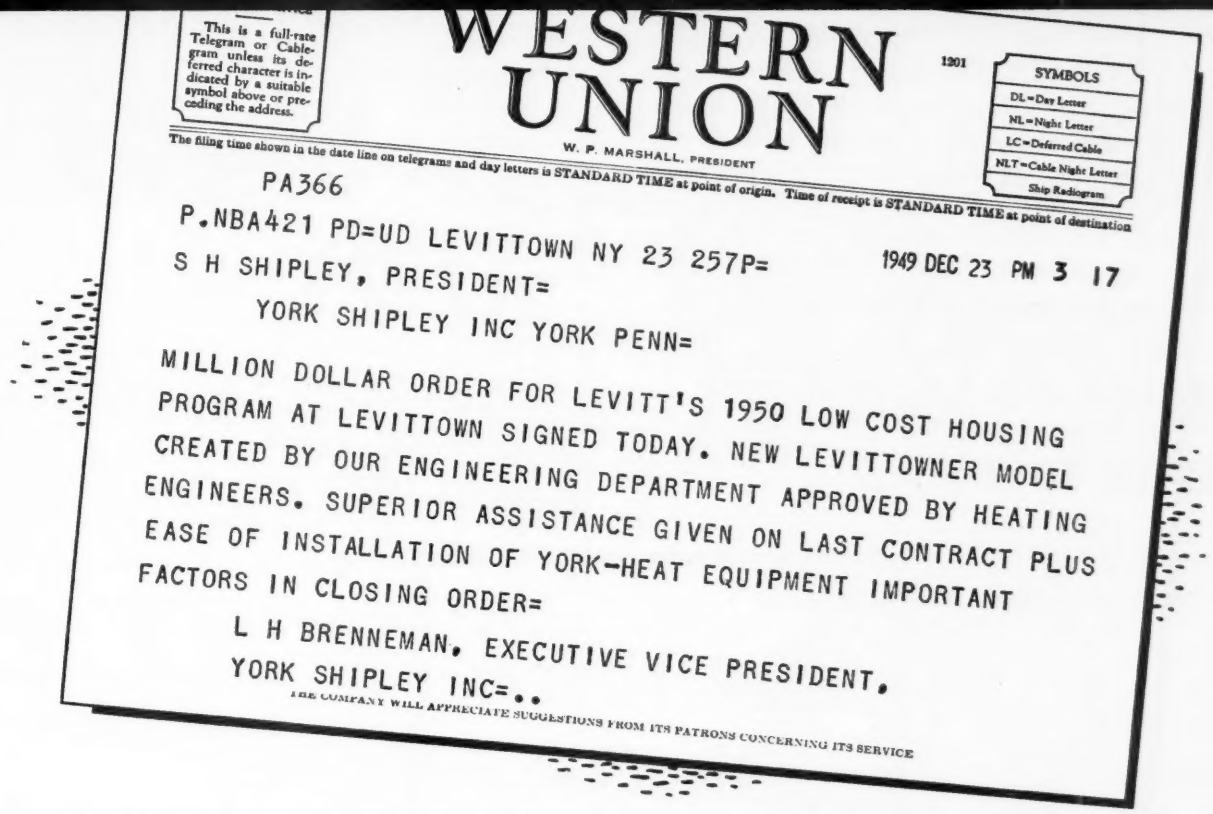
Then he runs two #18 low-voltage wires around the basement neatly to connect the transformer to the proper wires of the five-wire cable. This provides the current to run the clock.

With luck, the switch from a plain thermostat to a new clock thermostat can be made in 20 minutes. The new clock thermostat has all the neatness and eye-appeal that come of having all wires concealed. Still, the work of installing it is fast and simple because it includes no 110-volt wiring.

* * *

Herbert D. Bissell has been appointed executive in charge of the advertising, sales promotion and merchandizing departments, Minneapolis-Honeywell Regulator Co., Minneapolis 6, Minn. Formerly general advertising manager, Electric Auto-Lite Co., he also has been associated with N. W. Ayer & Son, Inc., as account executive on the Ford Motor account. Managers of the individual departments are to continue in their present capacities under the new executive, who will be in charge of all promotion departments of the company.

Always THEY ~~NEVER~~ COME BACK TO Quality



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WESTERN UNION

1201

W. P. MARSHALL, PRESIDENT

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NL = Night Letter
LC = Deferred Cable
NLT = Cable Night Letter
Ship Radiogram

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S H SHIPLEY, PRESIDENT=

YORK SHIPLEY INC YORK PENN=

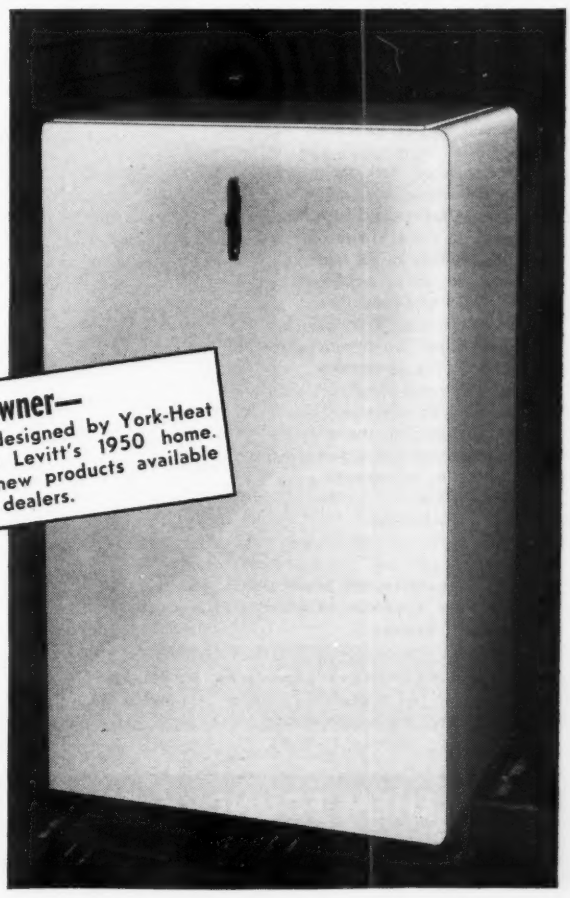
MILLION DOLLAR ORDER FOR LEVITT'S 1950 LOW COST HOUSING PROGRAM AT LEVITTOWN SIGNED TODAY. NEW LEVITTOWNER MODEL CREATED BY OUR ENGINEERING DEPARTMENT APPROVED BY HEATING ENGINEERS. SUPERIOR ASSISTANCE GIVEN ON LAST CONTRACT PLUS EASE OF INSTALLATION OF YORK-HEAT EQUIPMENT IMPORTANT FACTORS IN CLOSING ORDER=

L H BRENNEMAN, EXECUTIVE VICE PRESIDENT,
YORK SHIPLEY INC=..

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

YORK-HEAT'S quality wins again with America's largest home builder. Just look at the facts: 1. William Levitt & Sons are the largest buyer of home heating plants in the United States. 2. They have been building in Levittown since 1947. 3. Three of the nation's leading makes of oil-fired equipment, including York-Heat, have been installed. 4. They have had at least one winter's heating experience with each make. 5. For 1950, they *returned* to York-Heat. 6. No other heating manufacturer has ever received a repeat order for Levittown. 7. With the 1950 order, York-Heat becomes the No. 1 supplier of heating for Levittown.

York-Heat is the fastest growing producer of heating equipment—and offers dealers the longest line, strongest franchise. You owe it to yourself to investigate York-Heat's franchise today. There is always an opening for merchandise-minded dealers and distributors. Write York-Shipley, Inc., York 4, Penna.



The Levittowner—
Created and designed by York-Heat engineers for Levitt's 1950 home. One of the new products available to York-Heat dealers.

YORK 4h HEAT

IN RADIANT HEATING THERE IS ONLY **ONE BIG** NAME

YORK-HEAT

AMERICA'S FINEST AUTOMATIC HEAT

YORK 4h HEAT

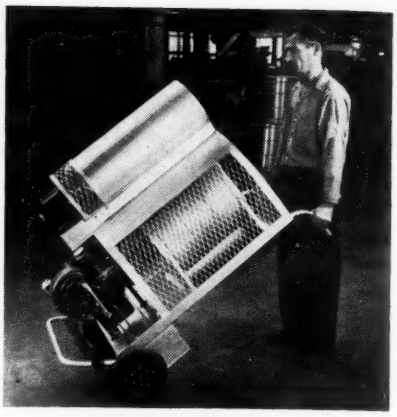
fueloil & oil heat

New Products

Silent Glow Model RF Is Portable, Oilfired Heater

MODEL RF compact, portable heater, developed by Silent Glow Oil Burner Corp., Hartford 5, Conn., is a complete self-contained unit, designed for use in the construction, agricultural and industrial fields for preheating, space heating, spot heating, drying, curing, thawing and ventilating. RF operates at the flick of a switch and delivers radiant heat instantly to warm sidewalls and floors of the area being heated. If forced air is required, it can be furnished by a 10" auxiliary fan mounted on top of the heater. The unit is mounted on wheels like a hand truck, can be moved from place to place by one man and when not in use can be tilted on end. It cannot be tipped over accidentally and all moving parts and heating surfaces are protected.

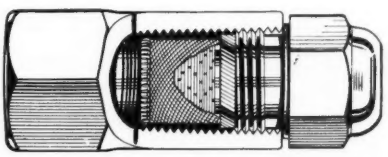
A high pressure atomizing burner fires the unit, which has a heat output capacity of 168,000 Btu/hr., with fuel



fed from a 5gal. built-in tank. Construction is all steel body, electrically welded. A manual switch controls operation of the RF, which functions on 110 volt, 60 cycle current. It is 53" long, 29" wide and 39" high.

Hally High Pressure Filter Replaces Nozzle Strainer

A HIGH PRESSURE FILTER that replaces the present nozzle strainer has been introduced by Hally Mfg. Co., Racine, Wis. The filter, developed by W. W. Hallinan, who heads the company, fits between a standard high pressure oil



nozzle and standard adapter, and consists of a filter adapter nut, strainer screen, inlet grooves, filter discs and a binding screw. Three models available are recommended for gallonage rates from .5 to 2.0 gph, with three types furnished to fit all standard nozzles.

The metal filter discs, employed in addition to the strainer screen, contain thirteen rigid discs spaced from 1/1000" to 3/1000" apart and clamped tightly together. Each disc contains 12 inlet grooves, allowing the oil to enter between the discs, and 12 outlet grooves, which carry the filtered oil out of the filter stack. Dirt is separated from the oil, deposited in the inlet grooves and around the periphery of the filter stack.

Armstrong Combustion Chamber Employs Insulating Fire Brick

THREE SIZES of combustion chambers, made of insulating fire brick, are offered

EASIER TO SELL!
FASTER TO INSTALL!

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The Bethlehem DYNATHERM

The Bethlehem DYNATHERM creates satisfied customers . . . gives them more for their money in fuel economy, in compactness, comfort and convenience! The Bethlehem DYNATHERM offers all the features that make your sale easier . . . The Whirling Flame . . . Unit Engineering . . . "Thermos Bottle" Insulation . . . Beautiful Cabinet. The Bethlehem DYNATHERM comes completely equipped with everything, ready for installation except the piping. Keep a step ahead of competition by selling something really NEW! . . . The Bethlehem DYNATHERM!

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Handy! CO_2 INDICATOR
VISI-DRAFT GAGE AND LEVEL
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COMBUSTION TEST SET

DO ALL SIX:

1. Determine proper CO_2 content.
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3. Adjust air control.
4. Establish draft conditions.
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Set includes durable carrying case, all accessories and instructions.

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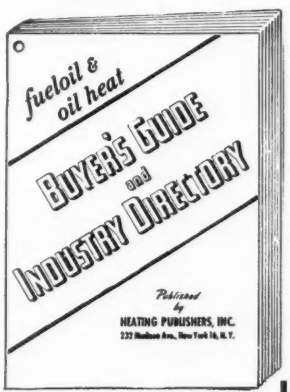

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THE BUYER'S GUIDE, directory of your industry, tells you where to buy anything oilheating men require. It's thoroughly cross-referenced. It contains more than 6,500 listings of 1,152 manufacturers, 14 general classifications, 58 subdivisions. Highly useful, year-round source of information.

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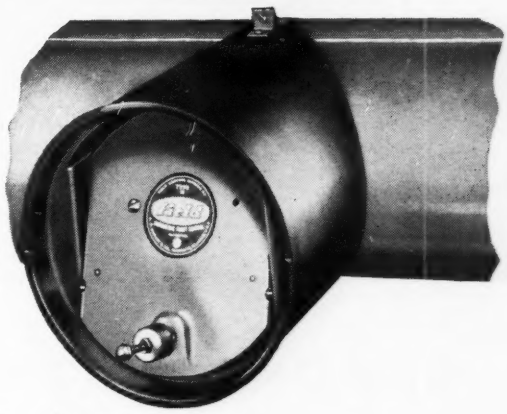
field

CONTROLS THE DRAFT



field CONTROLS BRING OUT THE FINEST IN EVERY HEATING PLANT

Today, Field Controls are first choice with manufacturers of oil-fired heating equipment. And this preference is based in every case on the manufacturer's own rigid and exhaustive tests. Each test has proven that Field is the most accurate, most dependable, most "saleable" draft control made. The reason is Field's famous, patented design features: *"Rocking Chair"* gate and pivot action, to reduce friction, increase sensitivity; *Off Center Gate Mounting* which provides a larger effective area for draft action; *Side Wings* for closer air volume control; *Extended Housing* which places the gate outside the reach of fouling, warping soot and heat. Only Field has all these features, and only Field enjoys unqualified acceptance by manufacturers, dealers and consumers.

WRITE for full details on the complete Field Barometric Draft Control line—for greater fuel economy, longer heating plant life, greater customer satisfaction.

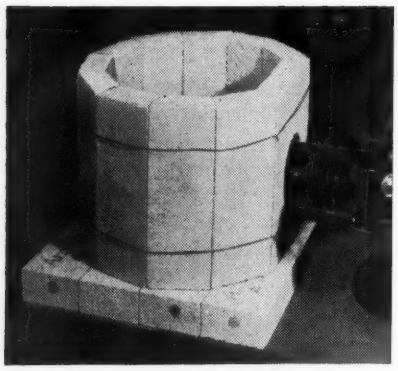
FIELD CONTROL DIVISION
H. D. CONKEY & COMPANY MENDOTA, ILLINOIS

AFFILIATES: CONCO MATERIALS HANDLING DIVISION CRANES—HOISTS

field REGISTERED

AFFILIATES: CONCO BUILDING PRODUCTS, INC. BRICK—TILE—STONE

BAROMETRIC DRAFT CONTROLS



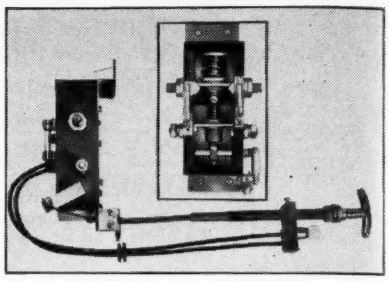
by Armstrong Cork Co., Lancaster, Pa., with the smallest chamber designed for burners with a 1 to 1.35 gph rating, the next size for capacities from 1.35 to 1.65 gph and the largest size for burners with a capacity from 1.65 to 2 gph. All three sizes are available in Armstrong's A-20, A-23 and A-26 refractories, to be selected according to the temperature produced by the oilfired unit. Larger heating plants can be equipped with combustion chambers constructed on the job with the company's standard insulating fire brick.

The fire brick for the new chambers all are pre-cut at the factory to proper dimensions, but they can be shaped easily with a rasp or saw blade to conform to the particular design of furnace or boiler or to accommodate grate lugs. Also, the burner port can be shaped with a rasp to fit any firing tube diameter. To erect the chamber, square brick are placed to form a base and wedge-cut sidewall brick are formed in a circle. Next, metal bands are pulled tight and fill-type insulation placed between the chamber and furnace or boiler walls.

Anderson No. 97 and 99 Vent-Rite Main Vents

TWO VENT-RITE main vent valves have been announced by Anderson Products, Inc., Cambridge, Mass. Both are of the non-adjustable type, featuring the "Com-Apart" action which makes it possible to take them apart for cleaning and servicing.

The No. 97 Vent-Rite main vent has better than average venting capacity to vent properly the normal size main. It may also be used for venting risers. The No. 99, illustrated, has larger venting capacity, such as frequently needed on automatically fired systems. Both valves are furnished with ¾" male by ½" female bottom connections; are both designed for use on low pressure systems.



Mak-Saf circuit switch, *a product of Rochester Mfg. Co., Rochester, N. Y., which was described on page 132, January issue. Top view shows the switch assembly in cross section. The switch is manually operated through a flexible cable. The inset is a view of the switch with the cover removed, exposing its heavy-duty and oversized copper contact plates, with positive contact assured by double compression springs exerting more than 50 lbs. of pressure. The entire case of the switch, designed for use on cars or trucks to prevent short circuit fires by enabling the operator to disconnect all electrical energy by pulling the handle, is electrically non-conductive.*

Sparkler Introduces Improved Oil Filter

A FUELOIL FILTER for domestic and industrial oilburner application has been introduced by Sparkler Mfg. Co., Mun-

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TIMELY • SOUND • PROFITABLE

Due to the sudden death of an important person, a reputable Mid-west manufacturer offers a complete going oil burner business for immediate sale. Completely engineered —laboratory tested—field tested—dealer accepted. Everything related to this business available, including data, drawings, patents, inventions, equipment, etc. Investigate now for further details. No brokers. Write.

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The products you are producing today will determine your reputation in future years. Satisfactory service over a period of time is the decisive test. And so it is with Emerson-Electric Motors . . . sixty years of motor-building know-how have earned for Emerson-Electric the enviable reputation of consistently producing motors with sound engineering and design principles, sound construction—motors that are literally "sound to the core".

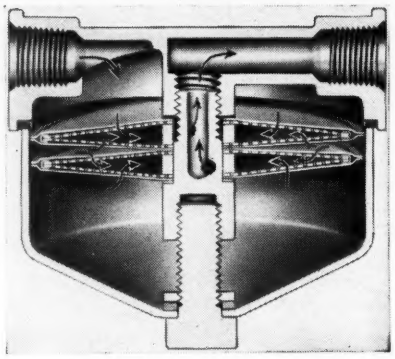
Scores of America's most reputable manufacturers recognize that their products are known by the service they perform. For this reason their products are powered by Emerson-Electric Motors . . . thus assured of years of dependable service. Your inquiry is invited as to how Emerson-Electric can guard the reputation of your product with its complete line of motors, 1/20 to 5 h.p.

THE EMERSON ELECTRIC MFG. CO.
ST. LOUIS 21, MO.

EMERSON ELECTRIC
MOTORS • FANS — APPLIANCES

delein, Ill. The filter, an improved version of the OB model introduced last year, utilizes a series of V-shaped horizontal filter discs, with a non-woven, synthetic rayon cloth filtering medium. The cloths are attached securely to the discs by a special method that assures a positive seal and yet allows the filter to be charged and cleaned quickly and easily.

All parts of the filter are made of rust-proof materials. Housing is cast-aluminum, inlet and outlet are ⅜ I.P.S. A full line is offered, with models available for space heaters through a range of sizes up to large units for industrial burners. Filter discs are packed in pairs in a pocket sized box. Two discs are used on the smallest size; four on the medium size and eight on the largest model.



Delavan Sludge Solvent Removes Water from Tank

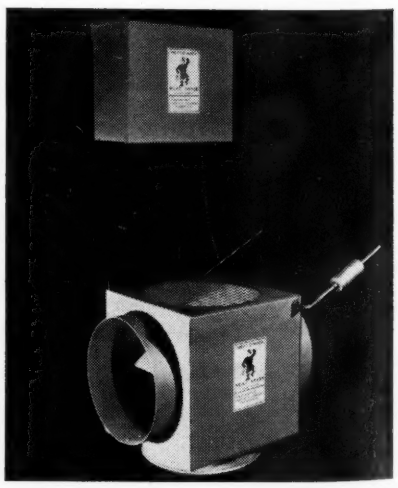
AN IMPROVED SLUDGE SOLVENT, announced by Delavan Mfg. Co., Des Moines, Ia., is designed also to remove water from the fueloil tank. The formula includes an ingredient that emulsifies the water so that it is carried off as the oil is consumed.

The effectiveness of the solvent in the removal in the removal of sludge and the prevention of soot has not been reduced by the addition of the water emulsifier, according to the manufacturer.

Thrift-O-Matic Heat Saver Is Furnace Pressure Regulator

THRIFT-O-MATIC HEAT SAVER, made by Engineered Products Co., Philadelphia 44, Pa., is an electrically-controlled furnace pressure regulator, designed to reduce excessive stack losses and is for use with residential and small industrial burners. Removing a section of the flue pipe permits installation of the unit in horizontal, vertical or elbow arrangement with the control mounted overhead. Sizes correspond to standard flue pipes, 8″ to 24″ in diameter.

During burner operation the Thrift-O-Matic Heat Saver controls chimney draft. The burner circuit cannot be closed until the control unit has placed the control in its free operating position, after which variations in the draft velocity motivate a baffle to proportion



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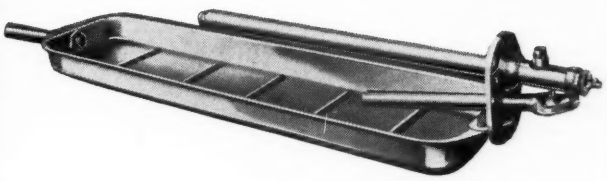
NEW! IMPROVED 1950 MODEL

THERMO-DRIP AUTOMATIC HUMIDIFIER



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  Thermo-Drip Humidifiers may be installed either above bonnet or with pan resting on bonnet—thus assuring easy installation plus continuous maximum efficiency.

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  All accessories of Thermo-Drip Automatic Drip Humidifiers are included in one kit. They attach easily to all types of warm air furnaces.

  Make Thermo-Drip Humidifiers a part of regular furnace equipment, and you will step up sales. Value-wise customers instantly recognize the superior performance features of Thermo-Drip. They know the advantage of the *bi-metal, fool-proof thermostat*—the *fingertip control*, the *long-lasting stainless steel pans.*

COMPARE THESE AMAZING UNBEATABLE PERFORMANCE FEATURES

- **New improved air-tight valve. Has positive seating action.**
- **Fingertip adjustment with lock nut . . . that assures hairline regulation.**
- **No electrolytic action.**
- **No clogging.**
- **Easier to clean and service.**
- **Less parts.**
- **No stagnant pool of water left in pan.**
- **Immediate vaporization.**
- **Easy installation.**

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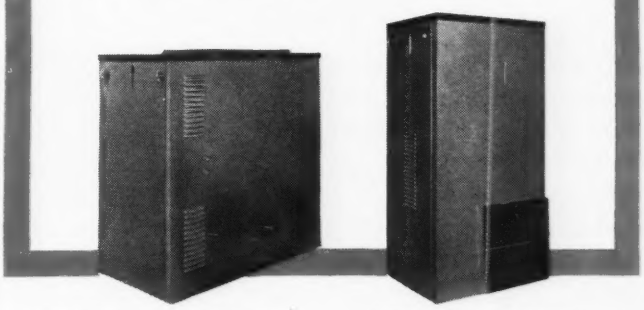
CEDAR FALLS, IOWA

You Can Sell Kaustine *Factory Assembled*

HIGH-BOYS
LOW-BOYS
for Today's Small Homes



LOW BOY—Dimensions: 46" x 49⅜" x 24½"; 95,000 B.T.U. at the bonnet with .85 nozzle. Float type pan humidifier; Economizer and "Air Way" combustion chamber.

HIGH BOY — Dimensions: 62½" x 31½" x 24½"; 65,000 B.T.U. at the bonnet with .65 nozzle. Economizer and "Air Way" combustion chamber.

KAUSTINE "Basic" models help dealers cash in on today's big housing market for Winter Air Conditioning Systems.

KAUSTINE Design, Easy Installation and Packaged Construction are the profit answers to ever increasing competition.

KAUSTINE DESIGN—**High Boy and Low Boy furnaces have output ratings of 65,000 and 95,000 B. T. U.'s at the bonnet, and operate with "GUN" type pressure burner for the tough, catalytic oils.**

EASY INSTALLATION—KAUSTINE **Units are fully assembled at the factory, and are shipped ready for installation. On High Boy Unit, opening for return air with filter can be quickly changed from right to left side, without cutting or marring furnace casing. Unit is shipped with opening on right hand side, but changes to the left, merely by exchanging panel in left side opening. High Boy Unit is also available with air return opening at bottom for use with cold air returns in floor of building.**

PACKAGED CONSTRUCTION—KAUSTINE Winter Air Conditioners can be shipped, with underground or basement oil storage tanks, in truckload quantities, directly to the job site from the factory, ready to set up and connect. This saves wasteful handling and expensive short hauls, thereby reducing ultimate consumer price.

For competitive advantage, get the facts on a KAUSTINE Dealership today!

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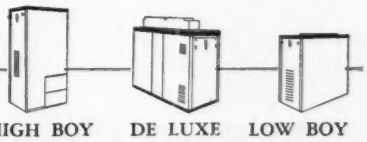

HIGH BOY DE LUXE LOW BOY

MODULATED WARM AIR FURNACES
SEPTIC TANKS PRESSURE VESSELS
SEPTIC SEWAGE DISPOSAL UNITS
OIL & GASOLINE STORAGE TANKS
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KAUSTINE CO., INC.
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Please send complete information and prices covering the KAUSTINE line of Winter Air Conditioners.

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the effective cross sectional area of the flue pipe with the intake of secondary air. After burner operation, the control unit moves the baffle into a lowered position, closing off the maximum allowed area of the flue pipe and fully opening the secondary air inlet, by-passing draft away from the furnace.

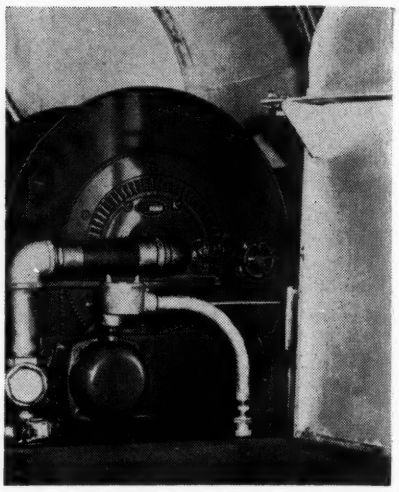
HyLo Firebox Baffles; Combustion Chambers

HYLO firebox baffle disks and oilburner combustion chambers are available from Hyzer & Lewellen, Southampton, Pa. The combustion chambers are made for conversion installations and also for use in assembling or manufacturing oilfired units. They are made of processed Vermiculite, clays and aggregates, moulded to shape and kiln fired. Finished chambers are packed with V-Lite backfill in cartons and are offered in sizes ranging from .75 to 3.25 gph capacities. Models V-10, 15 and 20 are for installations where temperatures up to 2200° F. are encountered; models 0-30 and 35, where temperatures up to 2600° F. are encountered. The 10, 15 and 20 sizes also can be furnished in "0" grade material.

HyLo firebox baffles are furnished in diameters of 10", 12", 14" and 16", shipped in cartons containing the disk, a refractory plug, high temperature alloy wire and supporting arm bracket. The disks have a fusion point of 3200° F. and features thin wall construction to prevent thermal shock and lengthen the life of the baffle.

Hannay Hose Reel Built With Explosion-Proof Electric Motor

POWER HOSE REELS, available for truck installations from Clifford B. Hannay & Son, Westerlo, N. Y., can be furnished with explosion-proof motors in all models except the 16-17 and 14-17. The motors, especially designed and built for Hannay hose reels, are Underwriters Approved, Class 1, Group D, explosion-proof, heavy duty, with permanently lubricated ball bearings, designed to be installed and connected with conduit. Its drive is quiet and uses only two sprockets and chain. The only control needed is a sealed push button; push to start, release to stop. There are no gears



to shift or clutch to engage or disengage. Balance of power and speed are maintained to provide safe rewind speed and ample, but not excessive, power for average applications.

Units are supplied complete with approved junction box, push-button switch, tubing, fittings 2/0 ga. cable, twin wire, solenoid switch, connectors, terminals and special insulating tape, available in practically every AC or DC voltage. Tests in both factory and field service have been conducted.

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in heating, refrigeration, aircraft or industrial processing...in *any* application where CONTROL is *vital*, you'll get better results with General Controls in charge. Whatever the *need*, for the best in automatic controls, it's General Controls.

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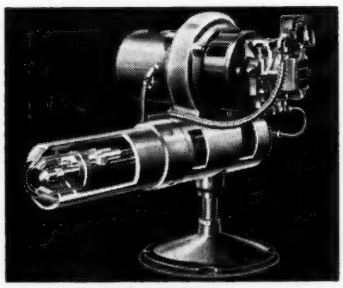
NOW AUTOMATIC HEAT plus ECONOMY

In Autocrat Oil Burners

This patented combustion head has dealer and consumer acceptance. When you show your customer savings year after year, he listens.



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Obround construction, 14 gauge black steel. Capacity, 275 gallons, yet built so that it can be easily carried through standard doorways. Constructed to Underwriters Laboratory Specifications.

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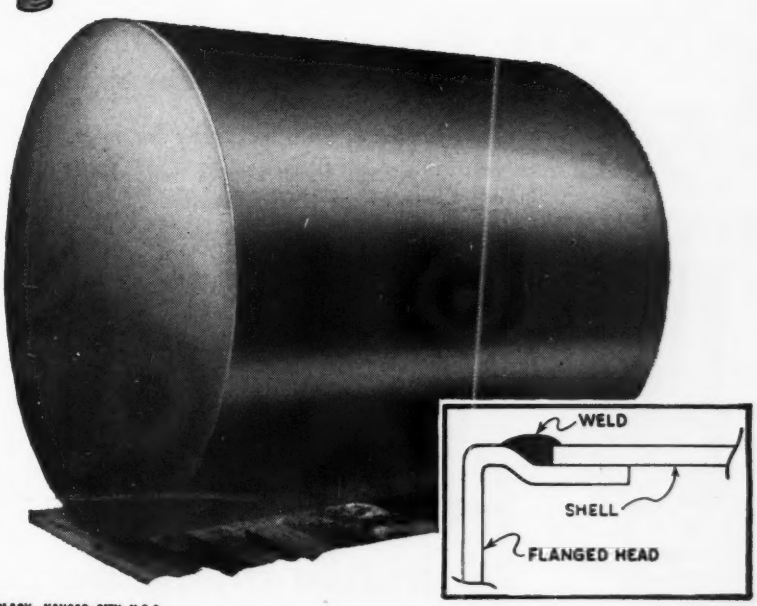
New plant equipment enables B S & B to produce top-quality Underground Tanks up to 12 feet in diameter with assembly-line speed. Exclusive head-and-shell joint gives *extra* strength, *extra* protection against leaks. Available in a variety of sizes and capacities.



WRITE TODAY! Tanks are in production. Ask for prices, delivery information, specification sheets. Address Special Products Division, Black, Sivalls & Bryson, Inc., Power and Light Building, Kansas City 6, Mo.

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BLACK, SIVALLS & BRYSON, INC.

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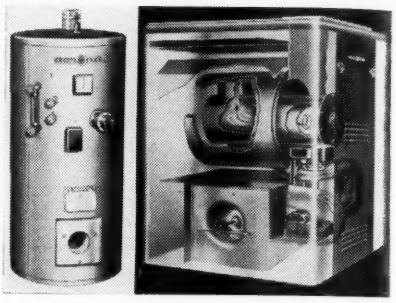
Norge Heat Announces Boiler and Furnace Units

A COMPLETE LINE of steel boiler-burner units for hot water, steam or vapor heating has been announced by Norge Heat Div., Borg-Warner Corp., Detroit, Mich. Designed for gas or oilfiring, the units feature a new type heat exchange principle. All units in the line, complete data for which are available from the factory, will satisfy 95% of all domestic hot water and steam heating requirements and are adaptable also to radiant heating installations. Models are offered in cabinet styles and in round jacket models, with matching burning assemblies.

Also added is the series F100 "Vacuum Draft" oilfired winter air conditioners, available in 90,000 and 120,000 Btu bonnet capacity sizes. Air and oil are atomized and burned in the stainless steel lined combustion chamber and flue gases pass through 17 lineal feet of horizontal spiral heat exchanger surface. Heat exchanger is constructed of 12 gauge steel.



F600 80-U, introduced at the same time, is rated with a bonnet output of 80,000 Btu/hr and is the first of a new series of oilfired winter air conditioners. It is fired by a high pressure atomizing burner and includes a stainless steel, jet type, tunnel firing combustion chamber, 12 gauge heat exchanger, interchangeable bottom or side filter frame and access doors and an air circulating blower. Factory assembled and designed for installation where space is at a premium, the unit measures 20" square, 52¼" high.

Models Added To Line Of Pacific-Wing Draft Inducers

PACIFIC STEEL BOILER DIV., United States Radiator Corp., Detroit 26, Mich., has added new sizes to its line of Pacific-Wing induced draft fans. They are engineered as units with Pacific boilers to eliminate extra installation cost. Stack sections for the fans also are available for some types of installations. Units can be installed with right or left-hand breeching connection to stack, with rear breeching connection or with top outlet for self-supporting stack.

Application of the fan units permit addition of boilers where existing stacks otherwise would prove inadequate. Also, they make possible location of boiler rooms on roof tops or other locations where draft difficulties might be encountered and eliminate or reduce in size costly stacks.

Thrush Flow Control Valve Equipped With Air Vent Tube

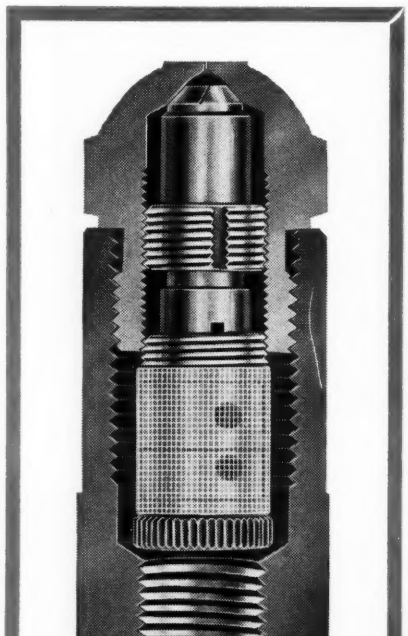
A FLOW CONTROL VALVE, announced by H. A. Thrush & Co., Peru, Ind., is equipped with an air vent tube and is available in 1", 1¼", 1½", 2" and 2½" sizes. The valves are for use on automatically fired, forced circulating hot water heating systems, designed to vent quickly all the air as it accumulates in

A Quality Nozzle Means Better Burner Performance

the New

STEINEN NOZZLE

ASSURES PERFECT COMBUSTION



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1. Micro-atomized spray for intensified heat.
2. Mirror finish causes heat deflection and prevents carbon collection.
3. Uniform shutoff.
4. Nozzles are interchangeable for different types of burners.
5. Each nozzle individually tested.

Steinen also manufactures nozzle adapters that assure uniform seating for positive sealing. Made in 3 standard lengths, tapped for ⅛" and ¼" pipe connections. Special adapters for your requirements. Inquiries invited from manufacturers. Write for information on our complete line.

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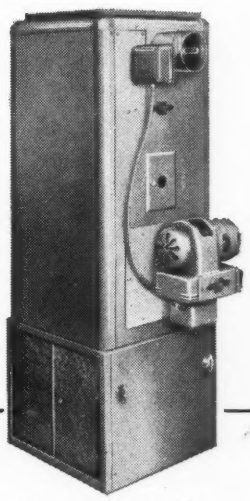
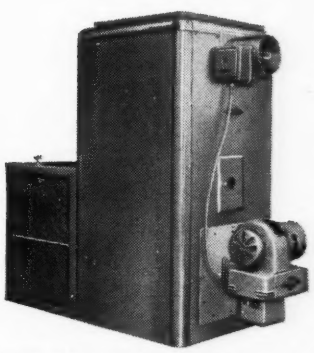
1950 WILL BE A BIG YEAR FOR HOME BUILDING!
GET YOUR SHARE OF THIS MARKET WITH THESE

DELCO-HEAT Conditionairs

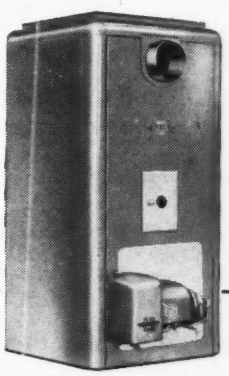
with famous Delco-Heat Pressure Atomizing Oil Burners—
or new, vaporizing-type, forced-draft oil burners



New Delco-Heat oil-fired forced warm air furnace compactly designed for utility room and basement installations—or where floor space is limited. Available with (1) the famous Delco-Heat pressure atomizing burner—or (2) vaporizing-type, forced-draft burner!



New Delco-Heat oil-fired forced warm air furnace—with (1) Delco-Heat pressure atomizing burner with the exclusive "Rotopower" unit, or (2) vaporizing-type forced-draft burner. For low-ceilinged basements and installations where head room is restricted!



New Delco-Heat oil-fired gravity warm air furnace with a new and dependable vaporizing-type, forced-draft burner. A wonderful value! Now even the smallest homes can have all of the advantages of top quality automatic Delco-Heat—at low cost!

Here are five new Delco-Heat Oil-fired Conditionairs—especially engineered to meet the requirements of owners and builders of small homes! Five new Conditionairs—in both gravity and forced warm air models—with either vaporizing forced-draft or pressure atomizing-type burners! They're easy to install, easy to service—and because all models have the same "basic unit" construction, they're economical for you to stock!

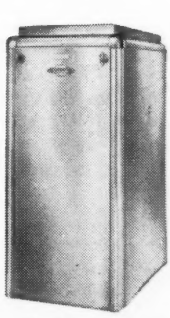
Most important—these new Delco-Heat Conditionairs, with their many outstanding features, will give your *value-conscious* customers exactly what they want in automatic home heating . . . dependability, comfort, convenience and economy!

These new Conditionair models are perfect companions to the other great Delco-Heat products—conversion Oil Burners, Oil-fired Conditionairs, Gas-fired Conditionairs, Oil-fired Boilers, automatic Coal Stokers, and Oil and Gas-fired Water Heaters. Now the Delco-Heat line is more complete, more valuable than ever. Now, when you sell Delco-Heat—a real General Motors' value—greater profits can be yours, because:

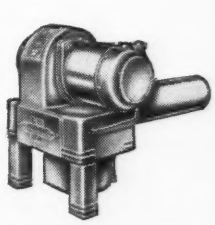
1. You'll be selling a name that's a household word—a name synonymous with *value.*
2. You'll have a complete line of oil, gas and coal-fired home heating units.
3. You'll be backed by research and engineering that will keep the products you sell out in front.
4. You'll have the help of an advertising and sales promotion program that *really works!*

For full information about the advantages of a Delco-Heat franchise, write to Delco Appliance Division, Dept. FO-2, General Motors Corporation, Rochester 1, N. Y.

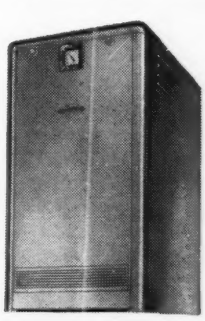
GENERAL MOTORS
DELCO-HEAT
Your Keys to Greater Profits



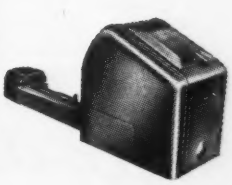
Delco-Heat Conditionair
(Oil or Gas-fired)



Delco-Heat Conversion
Oil Burner



Delco-Heat
Oil-fired Boiler



Delco-Heat
Automatic Stoker

Manufacturers of Delco Water Systems for farms and homes — Fractional Horsepower Electric Motors — Electric Automobile Clocks

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Klemm FUEL OIL FILTER
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When serving your customers with Fuel Oil or cleaning their oil burners be quick to suggest a Klemm Fuel Oil Filter. Klemm Filters remove water, rust, and sediment of all kinds from oil . . . helps step up heating efficiency. Get a supply of Klemm Oil Filter units from your jobber TODAY. See for yourself how easily customers can be sold this highly profitable item.

Klemm Oil Filters remove all water, dirt, sediment, rust, and all foreign matter from fuel oil . . . help make customers happy with the oil you sell. Metal bowl units listed Underwriters' Laboratories. All sizes available for every filtering need.

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Packed 12 to a carton, Klemm JR model oil filters take little counter space yet do a BIG job of selling themselves. Customers are attracted TO and buy direct FROM this attractive display carton.

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AUTOMOTIVE PRODUCTS CO.
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ly or manually. When in the high fire position, the cam permits the spring operated pistons to draw back to full stroke; in low fire position the stroke is shortened to permit only fractional filling of the cylinders. A gear-type pump with return flow maintains a full reservoir with reserve oil capacity, while air from the suction line is vented automatically from the top of the reservoir.

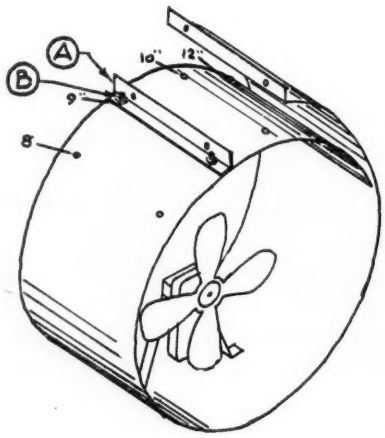
North American Series 21 Safety Shutoff Valves

DESIGNED to protect industrial furnaces against dangerous accumulations of fueloil in the event of a power failure, series 21 safety shutoff valves have been announced by North American Mfg. Co., Cleveland 5, Ohio. The valve stops the flow of gas or liquid when the current to its solenoid is interrupted, remains closed until the trouble is corrected and then must be reset manually. It features a globe type, soft-seating valve, available in sizes from ¾" through 6".

New-Aire Booster Fans For Duct Installation

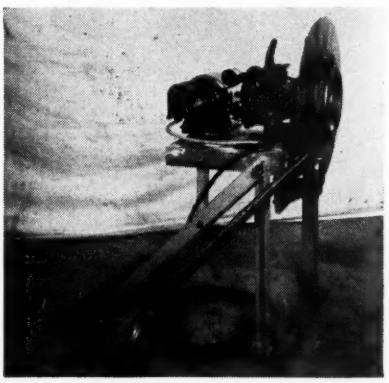
BOOSTER FANS for installation in ducts of warm air heating systems to increase air circulation are available from the New-Aire Blower Co., Detroit 27, Mich. It is recommended that the fans be installed close to the bottom of the pipe or duct to permit the greatest gravity flow when the fan is not operating. It is driven by a sturdy electric motor, with oil impregnated bearings, is precision made with balanced aluminum fan blades for maximum delivery with a minimum of noise.

To install the fan, a removable angle bracket is attached to an aluminum drawband, a hole is cut in the bottom of the duct, the fan assembly inserted and the drawband secured around the duct. Attachment to an electrical outlet completes the installation.



Senna Portable Pipe Bending Machine is Motor-Operated

AN AUTOMATIC PIPE BENDER, developed by Senna Service, Inc., Spokane, Wash., used successfully in its own operation for more than a year, now is being made



available generally. It has been designed especially for use on radiant heating jobs and bends ½", ¾" and 1" iron pipe without heating to 9", 12", 15" and 18" centers at 180°, or any other degree bend desired. It weighs approximately 500 lbs., occupies 36" x 46" floor space and operates on a 1 hp motor, 110 volt, 60 cycle.

Pipe is inserted in the machine and the switch thrown to the right. The machine starts, makes the bend and stops automatically. A flip of the switch to the left relieves the pressure on the pipe and it can be removed easily. Bending time is approximately 60 secs. The machine is hinged so that it can be operated upright, as illustrated, or in a horizontal position.

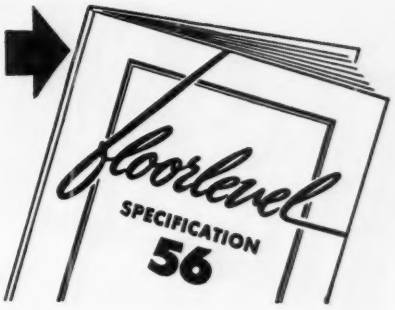
Certified WB Series Scotch Marine Boilers

ADDED to the complete line of boilers, boiler and furnace-burner units made by Certified Boiler Works, New York 1, N. Y., is the WB series oilfired Scotch Marine boilers. The new units range in capacity from 320 to 2200 sq. ft. steam, 512 to 3250 sq. ft. hot water, with larger sizes available on order.

The boilers feature three pass design, wherein the flame is projected into a specially built combustion chamber

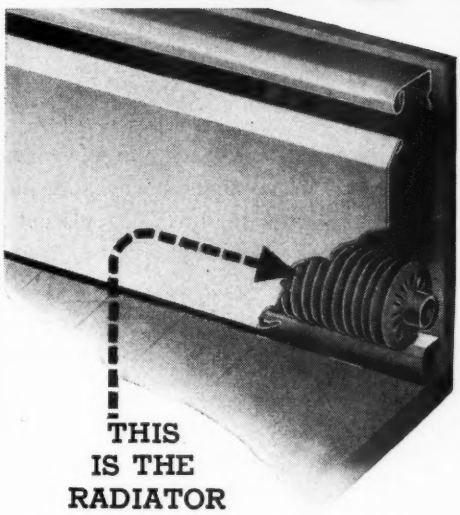
Spec. 56A

is swamping us with orders for . . .



"FLOORLEVEL"

BASEBOARD HOT WATER RADIATION



THIS IS THE RADIATOR

A COMPLETE INSTALLATION
in ONE money saving package

EASY TO HANDLE!
EASY TO STORE!
EASY TO SELL!
EASY TO INSTALL!

DE-AIRATOR TANK

"J" Series
BOILER-BURNER UNIT

THE COMPLETE FLOORLEVEL PACKAGE is packed in 3 cartons: (1) Heating elements, (2) Baseboard front panel and top moulding, (3) All miscellaneous fittings . . . Packaged in 6 different sizes for 200, 233, 263, 300, 333 & 366 sq. ft. radiation . . . for all size homes. *Designed for use with all types of hot water heating systems.* Circulators, flow valves and controls in required sizes.

THE DE-AIRATOR TANK UNIT is specially designed for *positive elimination of air* in hot water systems . . . Also acts as an expansion tank. Available for use with the following size installations: 500, 1000, 1500 sq. ft. of radiation.

Send for SPECIFICATION 56-A

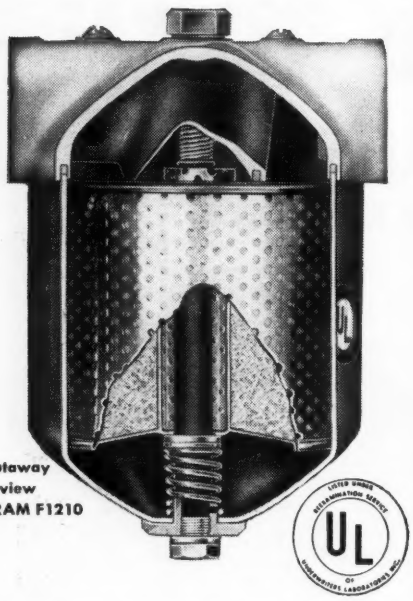
Since 1923

GENERAL Automatic

General Automatic Products Corp., 2300 Sinclair Lane, Baltimore 13, Md.
(Formerly General Oil Burner Corp.)

FRAM FUEL OIL FILTERS

Reduce Nuisance Calls—Boost Profits on Service Contracts



Cutaway view FRAM F1210

Filters the oil clean through an entirely new development • Removes dirt, rust, scale, water • Assures steady flow of clean oil to the burner • Protects pump valves and nozzles • Reduces service expense and needless, troublesome calls • Easy to install • Replacement cartridge builds repeat profits • Available in capacities of 2000, 4000, 6000 gallons of oil consumed per year. Send for complete details. Find out how you can profit with Fram.

FRAM FILTERS

MAIL COUPON NOW

FRAM CORPORATION
Providence 16, R. I.

Please send me complete details about Fram Fuel Oil Filters for Oil Heating.

NAME.....

COMPANY.....

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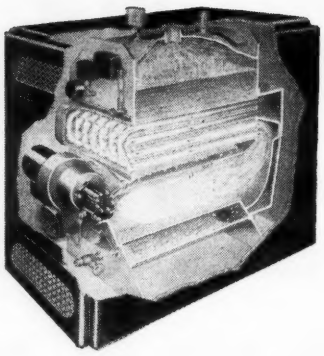


completely surrounded by water and into the fire tubes. The gases then pass through a double bank of tubes for both forward and rear passes. Year-round hot water is furnished by built-in instantaneous tankless coils. The units' jackets are finished in two-stone hammertone green.

Williamson Announces Anniversary Line Of Units

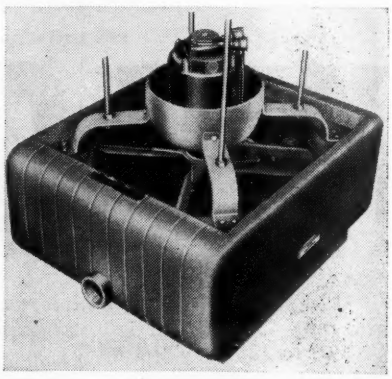
IN CELEBRATION of its 60th Anniversary, The Williamson Heater Co., Cincinnati 9, Ohio, is presenting new and complete lines of gas and oilfired units. The lines include deluxe models of furnace-burner units, hi-boy models, flo-warm conditioning units and gravity furnaces. All are neatly packaged, with cabinets finished in two tone silver-brown, baked enamel. The new models are described as priced to meet competitive conditions, with emphasis placed on ease of installation, greater heating efficiency, modern styling and compactness.

Modernized facilities in three Williamson factories have enabled the company to place the new lines on a production basis.

Down-Flo Vertical Type Unit Heaters

FOURTEEN models of Down-Flo vertical type unit heaters are offered by United States Air Conditioning Corp., Minneapolis 14, Minn. Capacities, based on 2 lbs. of steam pressure, 60° F. entering air, range from 137 to 1150 sq. ft. EDR or 33,000 to 276,000 Btu/hr. A rigid fan and motor mount is provided on the Down-Flo units, with a shield protecting the motor shell from overheating during periods of non-operation. Fan, motor, casing, shield and heating element all are combined into an easily supported and accessible unit. Provisions for heater supports are placed where required on the motor bracket straps.

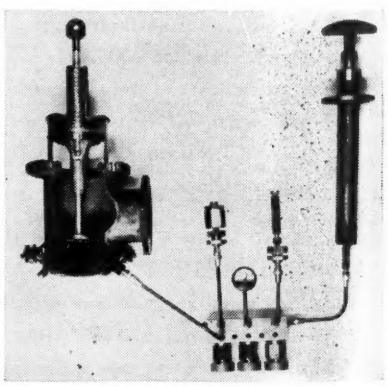
Standard models are furnished with a single set of louvres, but models can be shipped with dual deflectors, if desired. Also, circular air diffusers, cone deflectors or other special air distributors are available for special applications.



Where more economical or convenient, hot water may be used as a heating medium, providing forced circulation of the water can be accomplished.

Glasfloss Air Filter In Re-Usable Metal Frame

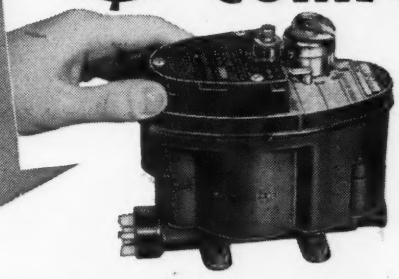
GLASFLOSS filter pads now are offered by the Glasfloss Corp., New York 17, N. Y., in re-usable metal frames. The refill type air filter, produced for all types of heating, ventilating and air conditioning systems, is made of fine, soft



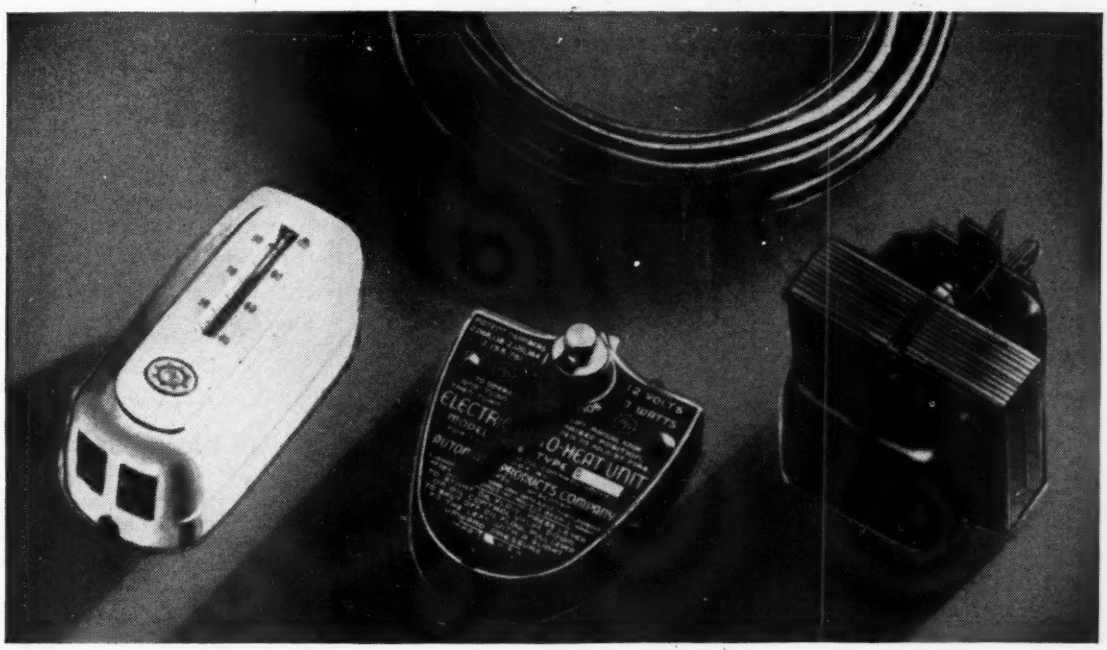
Warren *emergency valve for tank truck trailers, a product of Betts Machine Co., Warren, Pa. This illustration was used inadvertently with the news item on page 106 of our November issue, describing the Warren manifold valve. The emergency valve operates independently of the truck brake system, is protected by fusible and frangible plugs and closes on a leak in the system. It features a low pressure system, operated by a hand pump, and reports of actual tests indicate that freezing-up does not occur. The valve's large diaphragm permits pressure of 400 lbs. to be exerted to open the poppet valve, sufficient to break an ice accumulation in the sump.*

HELP YOUR OIL HEATER CUSTOMERS TO THE PRICELESS COMFORT OF *Automatic Heat*

Sell, Install COMFORT MASTER



Automatic Control for Oil Burning Space Heaters



Now your salesmen can develop NEW SALES TO OLD HEATER CUSTOMERS — and extra sales to new heater buyers — with the A-P COMFORT MASTER. Hundreds of oil heater users in your town will welcome this AUTOMATIC TEMPERATURE CONTROL — extra comfort and economy at the mere touch of a thermostatic dial. Already proved in homes throughout the country.

COMFORT MASTER is easy to install on any heater made since 1939, using A-P Model 240-D, U, or Y series manual controls. Just mount the "Auto-Heat Top" on the present manual control, and connect to Thermostat and Transformer.

A-P COMFORT MASTER Set includes: Heat Anticipating Thermostat, Auto-Heat Top, Plug-In Transformer, and all fittings. Model 240-ED for standard circulators, Model 240-ETS for fan-equipped heaters.

COMFORT MASTER SALES ARE EASY with all these Merchandising Helps! • Colorful Counter Stand • Display Card for Heater Mounting • Folders for mail to Users • Newspaper Ad Mats • A-P "Album" listing A-P Equipped Oil Heating Appliances • Slide-Sound Film for Dealer Showing.

AUTOMATIC PRODUCTS COMPANY

2458 North Thirty-Second Street, Milwaukee 10, Wisconsin

WRITE TODAY for the whole story on A-P COMFORT MASTER Automatic Controls for Oil Heaters — and complete Sales Helps.

DEPENDABLE *Controls*

FOR OIL . . . GAS . . . REFRIGERATION

fueloil & oil heat

Quality

WEBSTER ELECTRIC
Two-stage fuel unit

Past Performance has proved WEBSTER ELECTRIC fuel unit quality

Past performance has proved that an oil burner equipped with a Webster Electric fuel unit is an oil burner that can be counted on for long life and trouble-free performance.

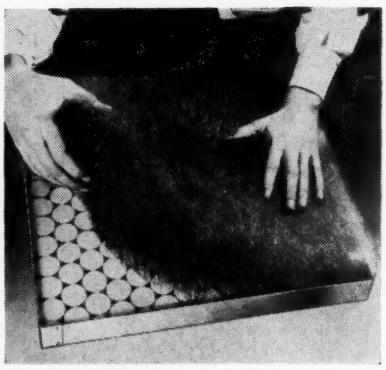
Customer satisfaction is enhanced by continuing refinements in design which provide the utmost in quiet operation, quick cut-off, simple adjustment and unusual ease of servicing.

Webster Electric fuel units are known as quality units and you'll find they are never out of date. Parts are interchangeable year after year to keep older fuel units giving up-to-the-minute performance.

WEBSTER ELECTRIC

Webster Electric Company, Racine, Wisconsin • Established 1909 • Export Dept. 13 East 40th Street, New York 16, N. Y. Cable Address "Arlab", New York City.

"Where Quality is a Responsibility and Fair Dealing an Obligation"



glass fibre, whose thin diameter is described as permitting freer air passage so that the elements can be heavily laden with dust particles without clogging the pack and imposing extra loads on equipment.

When the filters are to be changed, the light metal frame is removed from the filter bank, unfastened and the used pack discarded. A fresh pack is inserted, the frame re-taped with regular industrial tape and the unit returned to the filter bank.

* * *

Boyar Electrical Fueloil Preheaters

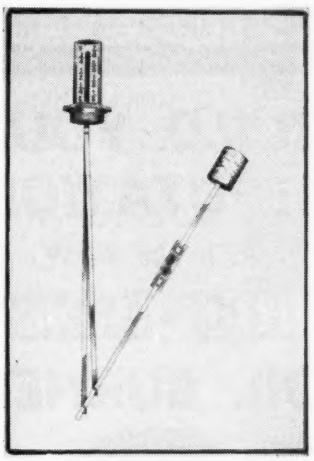
EIGHT MODELS of electrical fueloil preheaters are produced by Boyar Products Corp., Lombard, Ill. Four vertical types have rated capacities ranging from 50 to 150 gph through a 60° temperature rise, 25 to 75 gph through a 120° temperature rise. Four, larger horizontal models deliver from 200 to 500 gph and 100 to 250 gph through the same temperature rises. The preheaters are installed in oil supply lines and require 220 or 440 volt, single or triple phase current, depending upon the heater size. Standard equipment furnished includes Mercoid temperature controls and temperature gauges and one magnetic contactor.

Two temperature control bulb well openings are provided for right or left

hand installation of the units and all models are internally wired at the factory. Discharge tubes are installed so that heated oil is drawn off the top of all models, and with inlet openings at the bottom of the heaters, a flow along the entire length of the heating elements is assured.

International Tank Gauge With Flexible Float Arm

A LEVER ARM TYPE GAUGE, known as the International, has been announced by Applied Mechanics Co., Boston,

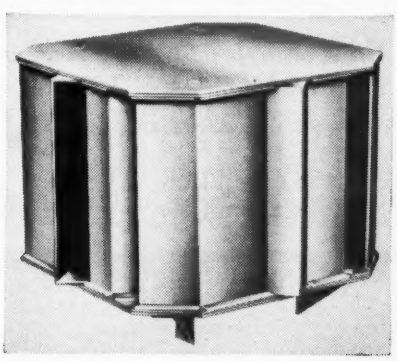


Mass. Described as particularly suited to large scale building projects, the International is built oil tight at the factory and comes assembled for quick installation.

It features a flexible float arm, permitting it to be installed at any time, regardless of the oil level in the tank. Extra large numbers are calibrated in eighths on an aluminum dial.

Agitair "CNO" Exhauster Made by Air Devices, Inc.

AGITAIR "CNO" exhausters, produced by Air Devices, Inc., New York 17, N. Y., are constructed of heavy gauge steel, designed for roof ventilating, vent flues and chimney tops. Head sizes from 5" to 48" are available, with the 5" and 8" sizes shipped assembled, the larger sizes



Products

WEBSTER ELECTRIC
Transformer

Thousands of satisfied users recommend WEBSTER ELECTRIC transformers

Webster Electric transformers give positive ignition under all conditions. Their installation assures freedom from ignition trouble . . . their performance has won the approval of thousands of satisfied users.

For thirty years, they have been widely used as standard equipment by the heating industry because of their superior design and long-life performance.

Desirable features of Webster Electric transformers include: easy interchangeability, wide adaptability, extra-sized junction boxes for easy connection, separate mounting plates for easy replacement, and mica-protected secondary coils.

WEBSTER ELECTRIC

Webster Electric Company, Racine, Wisconsin • Established 1909 • Export Dept. 13 East 40th Street, New York 16, N. Y. Cable Address: "Arlab", New York City.

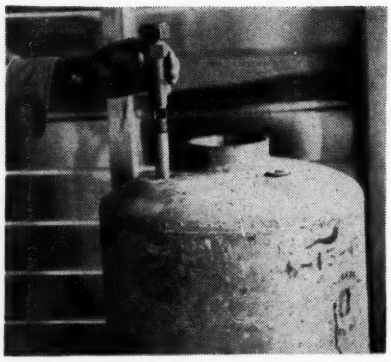
"Where Quality is a Responsibility and Fair Dealing an Obligation"

knocked-down for assembly on the job. The exhausters have no moving parts and feature wide venturi-type orifices for efficient operation.

The units are described as preventing down drafts and being weatherproof under all conditions. They do not restrict the flow of air when there is no breeze and do not interfere with natural draft.

Methuselah Anodic Rod For Water Heater Tanks

ANODIC RODS, made of cored magnesium, are offered by the Methuselah Water Heater Co., Muskogee, Okla., for installation in hot water tanks to prevent and counteract rust formations. The rod is full length, applicable to all tanks from 12 to 50 gal. size, or it can be installed in multiples where necessary. The core of the rod shows red when the magnesium has been expended and prevents the rod from dropping off as it is consumed.

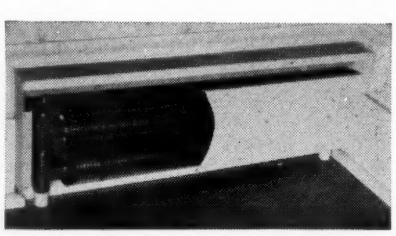


Incorporated in the holding fitting, made from machine moulded brass, is a tank nipple, reducer and a union. A patented method of applying the rod to tanks is simple and can be accomplished in a minimum of time. When consumed, the rods can be replaced easily.

Ideal Plumbing Offers Baseline Convectors

BASELINE copper convectors, made by Ideal Plumbing Mfg. Corp., Washington 5, D. C., are available in ten models, both single and double core types. Designed for baseboard installation, single and double core units fit the same support brackets and use the same exterior covers so that single core units may be expended later, if desired. The assemblies are made in 4, 5 and 6 ft. lengths, cores in 8 ft. lengths.

A two piece support bracket is used, with which it is possible to assemble the core, lift it in place, insert and hook

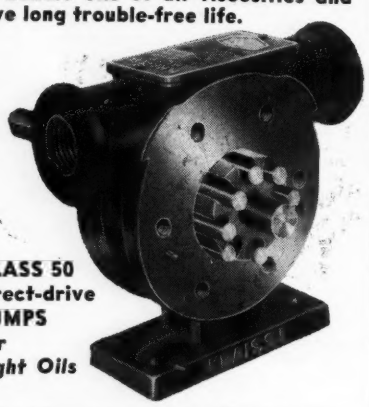


the bracket. Supplied with each Baseline unit is a heat control damper. Regular ¾" sweat fittings are used. Units which can be affixed to the wall or recessed.

ARTHUR C. BAUMANN, Philadelphia 42, Pa., in a 4-page folder describes the Eco-Temp portable, direct-fired boiler-burner unit, adaptable to applications where temporary heat is required. The unit, mounted on rubber tired casters, incorporates a unit heater, mounted on top, for directing the heat where desired. Plugging into a 110 volt outlet is the only connection necessary, since a 30 gal. fueloil tank is included. The folder includes left and right side views of the unit and enumerates construction and operating features.

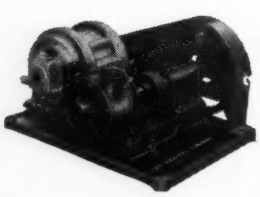
KRAISSL
FUEL OIL PUMPS

Compact, lightweight pumps that operate at wide ranges of speed—to handle oils of all viscosities and give long trouble-free life.



CLASS 50 Direct-drive PUMPS for Light Oils

Roller tolerances permit handling extraneous matter that would jam other mechanisms. Good suction characteristics. Capacities 60-600 GPH; pressures to 100 psi.
Ask for Bulletin A-1330



CLASS 60 Reduction-drive PUMPS for Heavy Oils

Time-tested Kraissl design for direct burner supply—or as booster pump. The pump that will pull heavy oil when it is cold. Capacities, 75-1800 GPH; pressures to 100 psi.
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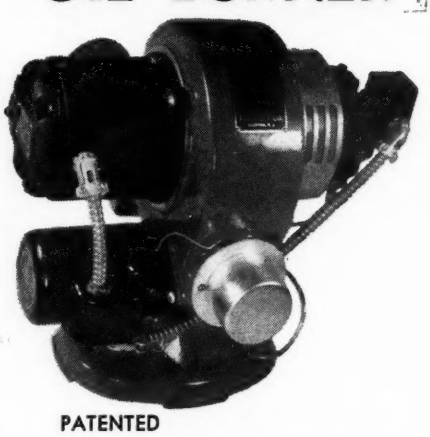

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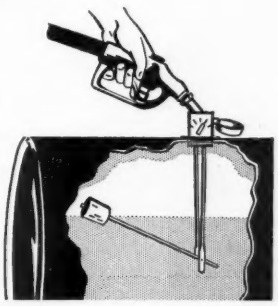

For 55-gallon oil drums. Meets all requirements. Gauge, vent and fill-pipe all in one. Installed without wrench or tools of any sort. To fill drum, gauge need not be removed. Hinged cover is just lifted and replaced. Old-fashioned measuring sticks are out. With Fil-Thru user knows at a glance when to order and fill man can tell at once how much is required. Attractive in appearance, rugged in construction, rainproof and non-corrosive.

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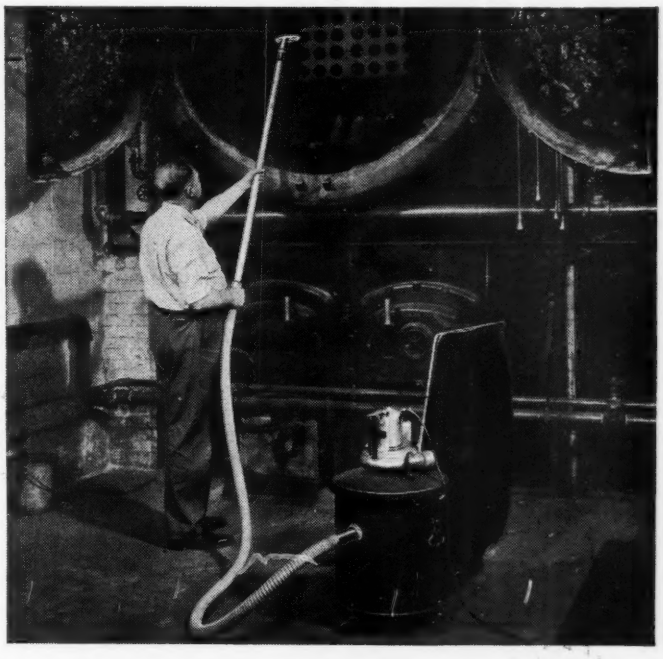

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Modern General Electric furnace-cleaning equipment makes the work easy. With this unit, the soot that cuts down heating efficiency can be quickly and easily removed.

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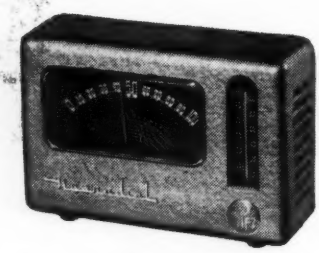

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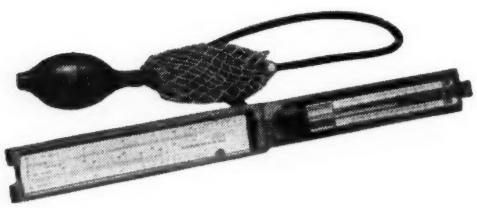

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Reader's Problems

Q. Our problem is extravagant claims as to relative efficiencies of high pressure and low pressure burners.

Competitors claim much higher efficiencies with certain burners than seem reasonable, and at the same time point to ability to use oils which these burners never actually will use on installations.

We don't know how you will answer this in your column, but if you can give us any information we would like to know the following:

First, is there any available evidence by disinterested persons or laboratories as to the superior efficiency of either the low pressure burner or pressure burner, particularly comparing these two types of burners?

Second, while in demonstrations or with special rigging for either small or large burners of these two types it is admitted that there may be success in using oils heavier than usual domestic heating oils, is it actually practical to use oils Nos. 4, 5, and 6 for pressure burners and low pressure burners installed to heat homes?

C.C.W., Chattanooga, Tenn.

A. First, No. There is no available evidence which, comparing pressure and low pressure burners, indicates that disinterested persons or laboratories conclude that in general either type has the characteristic of giving superior efficiency. It is very likely that a low pressure burner of truly excellent design and construction would give higher efficiency than a pressure burner merely typical in design and construction; while similarly an excellent pressure burner can be expected to produce higher efficiency than a low pressure burner of typical or poor design. Considering efficiency alone, the best burner can be defined as the one which produces com-

plete, clean combustion while giving the flame the least air. That boils down practically to the ability of a burner to give a high CO_2 reading while giving some certain low reading on a smoke meter. On this basis, to our knowledge there is no vast difference between the performance of the best pressure burners and the best low pressure burners.

Second, it is not good practice to try to use Nos. 4, 5, and 6 oils in house-heating pressure or low pressure burners whose manufacturers recommend that Nos. 2 or 3 oils be used. Safety and fuel economy are involved. The fact that a certain burner model can give a flame using an especially heavy oil does not indicate that this oil should be used regularly, on actual installations, by the burner. The fact that vaporizing pot type burners, horizontal rotary cup burners, or gun type burners, all intended for house-heating, can burn crankcase drainings for short or long periods in laboratories, for example, is not taken by the manufacturers of these burners as an indication that the home owners using these burners should fill their storage tanks with crankcase drainings.

* * *

Q. After tending to motor trouble, our service man connected wrongly the three wires going to the polyphase motor of a horizontal rotary cup burner, turned on the motor and ran it the wrong way, and broke the oil pump. What's the cause of this and how to avoid it in the future? G.S.S., Newark.

A. Running backwards, the oil pump tried to force oil backwards through the suction line. A foot valve or check valve in this line prevented the oil from flowing backwards, and probably the pump was damaged by the extremely high oil pressure therefore developed in it.

Knowing he can damage a pump in this way, a service man never damages one. Usually one simple precaution suffices. After working on the wiring to the motor, don't turn on the motor and let it run before checking for proper rotation of the motor shaft. Instead, close a switch and open it quickly, giving the motor only enough current to cause it to budge or take a turn or two, then with the burner swung open on its hinge look at the cup and make certain it turns the right way. If there is more

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If you are using or contemplating the use of heat-resistant stainless steels for combustion chambers for oil burner furnaces, we are specialists in producing these types of steels. Whether you are a large or small user of these steels our steel making facilities can offer exceptional service by especially shearing to your specified combustion chamber steel blanks, or multiples thereof. Write us for additional information.

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than one man on the job, as there often is in starting a new burner, one man can watch the way the cup turns when another man snaps the switch on and off.

To play absolutely safe if you want to take every possible precaution, start the motor (when you don't know yet if it is wired for proper rotation) only after you have provided an opening in the suction line, close to the burner, out of which oil and air can come if the pump happens to turn the wrong way. Remove a priming plug from the suction line, the top off a suction line strainer, or the cap from a check valve.

* * *

Q. This burner loses its prime every summer because the outside tank is deeply buried. Is there an easy way to end the nuisance of a service call to air-rid the burner every fall?

E.E.U., Columbus, Ohio.

A. Try one or two good check valves at the burner in the suction line, and a filter ahead of them in the line to keep them free of dirt and sediment. A return line reservoir made of 2" pipe located above the burner may help. If the job has a pressure burner equipped with a simple pump or fuel unit, consider switching to a two-stage fuel unit. A wall pump, to draw oil from the buried tank and feed the burner by gravity, is an excellent way out of such trouble. Pages 19 to 21 of the book, "Heading Off Trouble in Domestic Oilheating," discuss your problem in detail. The book is available at $1.

* * *

Q. In the past few years we've installed many oil furnaces, learned lots about them, but could not find a thing to read on how to keep the automatic humidifiers working. We make a big point, in selling, of automatic humidification, therefore feel conscience-bound to keep the humidifiers working. With very hard water, how do you end lime trouble that quickly puts the float-feed out of order?

S.D., Three Rivers, Mich.

A. First, installing a water softener is a good answer to the problems given by hard water, though you can't expect a home owner to buy a water softener mainly to keep your humidifier working. Second, it helps to alter equipment so that the float-valve device is in a cool, rather than hot, location. One furnace dealer reports that in his own home he eliminated 90% of the lime trouble by installing a float valve far from the furnace on a cool basement wall.

Third, check on different makes and models of humidifiers and related equipment, and find out if you want to specialize in humidifier equipment designed especially to be free of hard water trouble.

We do not recommend that you be less conscientious, but we do point out that certain furnaces are fitted with exceedingly inexpensive automatic humidifiers which in nine cases out of ten are not working two or three years after being installed. To try to keep cheap humidifiers working may be love's labor lost.

* * *

Q. We have three or four installations which puff back every time the burners start. They all involve 85,000 Btu oil furnaces, 1.0 gph nozzles, 100 lbs. pressure, and 7" smokepipes and draft regulators. They all are installed

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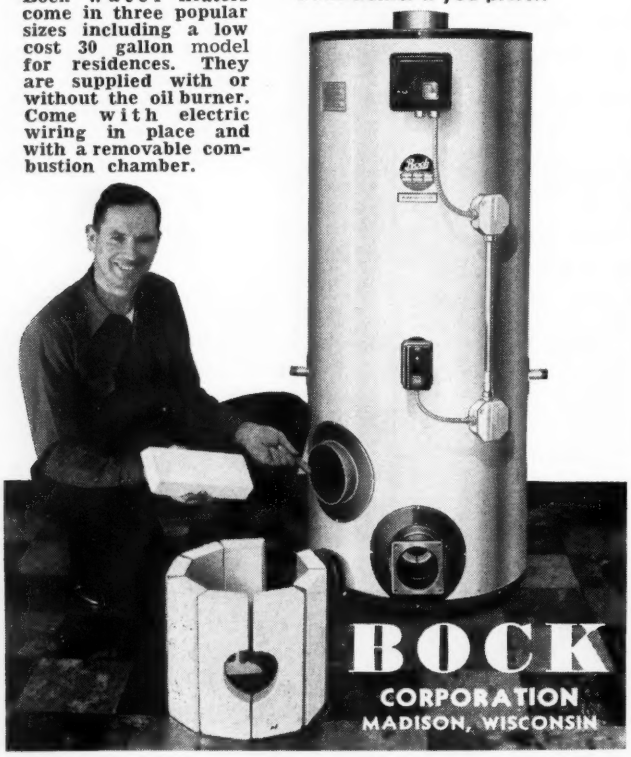
Sell BOCK WATER HEATERS with a Gun type Burner. Your Burner if you prefer.

Bock water heaters come in three popular sizes including a low cost 30 gallon model for residences. They are supplied with or without the oil burner. Come with electric wiring in place and with a removable combustion chamber.



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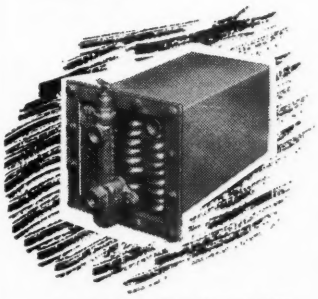

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The speed of the motor and its horse power rating are all you need to know to select a safe, long-lasting Sprague motor capacitor replacement. Write for free Sprague shop wall chart C-900 and Sprague pocket guide C-901.

SPRAGUE PRODUCTS CO.
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93 Marshall Street
North Adams, Mass.

with the draft regulators in the chimneys below the smokepipe openings. The only way we have been able to stop the puff is by opening the glass fire door about 1/8". The electrodes are set 1/2" from center with a 1/8" gap and flush with the end of the nozzle.

C.O.C.A., Ludlow, Mass.

A. Starting pulsation such as you describe (and identified in that you can cure it by leaving the fire door open somewhat) presents a stubborn, difficult problem for which there is no one, certain cure. Of the two dozen things you can try, one may fit especially well in the case of the particular furnaces. The amount of both and work involved in the cure strikes different dealers differently. One dealer will gladly spend a day on each job to end the trouble once and for all, while another dealer is impatient, giving an hour's time.

Switching to a nozzle or a combustion head of greatly different characteristics may end the trouble. The most practical remedy may lie in using a 2" or 3" pipe nipple, filled with rock wool and located next to the gun tube, as a breather device for the firebox. Perhaps you can drill and tap the fire door for a 1¼" or 1½" pipe nipple, to be filled with rock wool suitably held in place and used as a fire door breather. A solenoid oil valve may be installed in the nozzle line and arranged to permit oil to spray from the nozzle only after the motor has had a few seconds to reach its proper, maximum speed. In the past three years, a dozen other ways to end this trouble have been discussed in FUELOIL & OIL HEAT. Work for you and a show of patience are involved, but you must find out for yourself which method for ending the pulsation is best for your jobs.

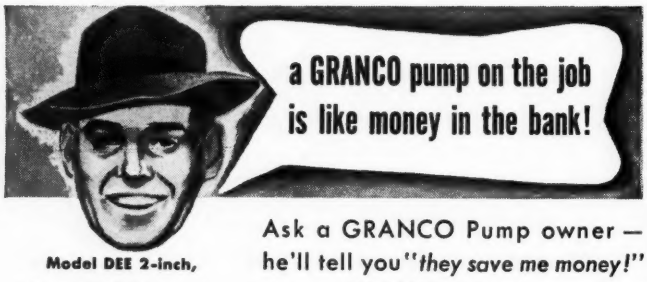
* * *

Q. How much pressure is on the nozzle of a low pressure burner? After deciding to use a certain pressure, how does the manufacturer of a low pressure burner arrange for the burner to develop only that much? Do you mind stating why when questions I send you are printed you never give my correct initials in your columns?

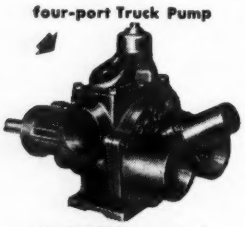
D.D., New York.

A. While up to 15 lbs. pressure has been used on the nozzles of low pressure burners, usually five lbs. or less is used. As low as 1½ lbs. pressure may be used. The maximum pressure which a particular model can develop may be the result of a balance between the capacity of an air compressor and the size of the orifice and slots of the nozzle. The use of greater compressor capacity would lead to higher pressure on a nozzle of certain design. A compressor of certain design would develop higher pressure when feeding a nozzle which has small openings. The use of a bypass valve or pressure regulating valve may permit adjusting on the job for less than the maximum pressure the burner can develop. Such a valve may permit some of the air given out by the compressor to escape to the intake of the compressor instead of going to the nozzle.

By policy, the initials of the questions are scrambled or altered, and the source of the initials may be the name of the individual who writes the questions, or his company. This eliminates chances of a dealer's being embarrassed by competitors' identifying him through his initials and spreading information on his technical problems.



Model DEE 2-inch, four-port Truck Pump



Model DEE mounted, with oil-tight gear housing

Ask a GRANCO Pump owner — he'll tell you "*they save me money!*" Put a GRANCO Pump on your truck or pipe line and you'll say the same. Because . .

WITH GRANCO YOU GET

★ Low initial cost. ★ Lower installation cost — flexible four-port design mounts in any position. ★ More GPM per lb. of pump weight. ★ Less maintenance — single rotor, fewer moving parts. ★ Long, trouble-free service. ★ Integral dash-pot relief valve.

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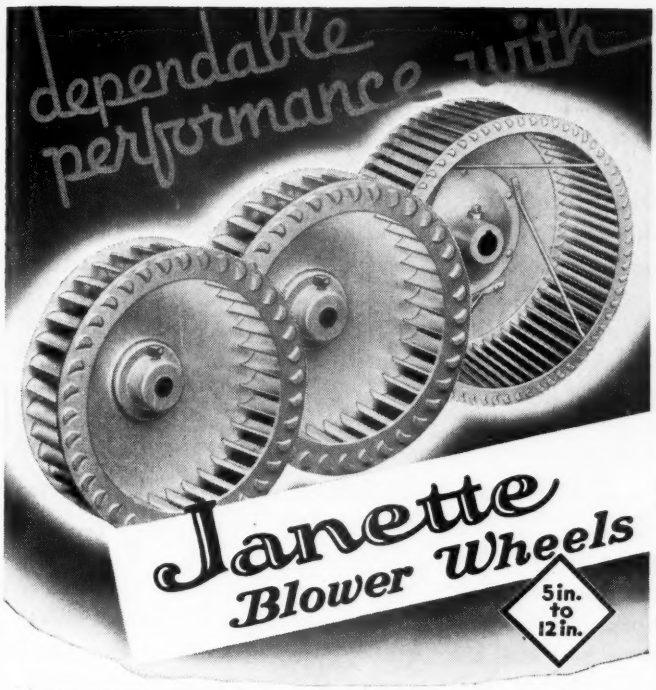

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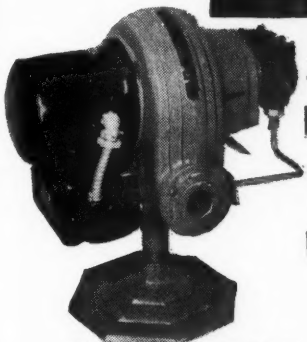

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1. RADIANT burner performance is equal to the highest price burner. Yet they are priced to meet the lowest competition, even on project work.
2. Heavy sales are due to
   —low cost of upkeep
   —ease of installation and servicing
   —factory guarantee
   —national distribution in protected territories

Write for complete details

Northern Illinois and Wisconsin Representative

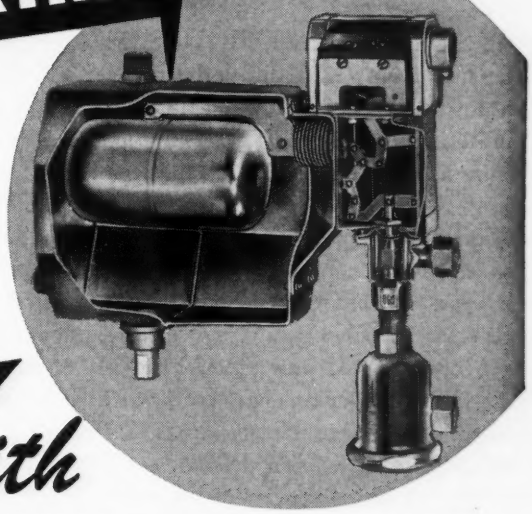
F. B. KELLY & ASSOCIATES
539 West Arlington Place
Chicago 14, Illinois

RADIANT UTILITIES CORP.
8817 18th AVE., BROOKLYN 14, N. Y.

RADIANT OIL BURNER

YOU GET THESE **6 EXTRAS**

- Modern Appearance
- Low Cost
- Less Corrosion
- Easy to Install
- Easy to Clean
- Simple to Repair



with

MAID-O'-MIST
Boiler Water Level Controls

Yes, six extras that mean a lot to the man who installs these controls. And these extras are in addition to the safer, more dependable, boiler protection.

The new 500 Series of Maid-O'-Mist Boiler Water Level Controls are compact, streamlined and light in weight (only five pounds) . . . because they are built entirely of non-ferrous metals. These controls are highly dependable because of such new features as the "approved" switch used as a circuit breaker in the low water cut-off . . . the rapid snap action of the contacts . . . the generous use of silver . . . the size of the switchgap . . . all making it possible to break large currents without pitting or sticking.

STOP WATCHING THE WATER LINE

. . . Use Maid-O'-Mist Water Boy Controls for Safer Boiler Protection.

No. 500 WATER BOY SERIES IN FOUR COMBINATIONS

Designed for low pressure steam boilers up to 5000 sq. ft. capacity carrying 25 lbs. maximum steam pressure. Come complete with quick hook-up fittings.

No. 577 Water Boy. A combination Feeder and Low Water Cut-off for automatically fired boilers. Switch rating ¾ h.p. 110v. A.C. and 1½ h.p. 220v. A.C.

No. 567 Water Boy. Feeder only. Low water cut-off can be added later to make it identical to No. 577.

No. 568 Water Boy. A combination Feeder and Low Water Cut-off with addition of a signal light that flashes when water drops to ½" in gauge glass.

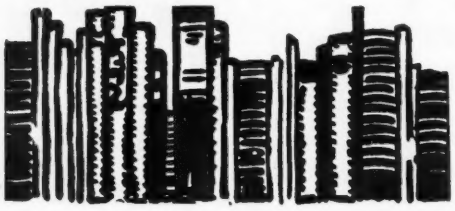
No. 587 Boiler Guard. Low Water Cut-off only, giving same cut-off protection as No. 577 but without Water Boy Feeder.

We cannot give you an adequate word picture of the important developments incorporated in these controls. You must see them—try them. Send for catalog No. 500 Now.

MAID-O'-MIST INC.
3221 N. PULASKI RD.
CHICAGO 41, ILLINOIS

AUTOMATIC HUMIDIFIERS

THE BOOK SHELF



Second Edition of Buyers' Guide Issued

THE 1949-50 EDITION OF FUELOIL & OIL HEAT'S Buyers' Guide and Industry Directory has been published, and incorporates the Directory of Oilburner Manufacturers, previously issued separately.

Format and appearance of the listings are much the same as last year, with all types of oilburner accessories and equipment tabulated by type. Listings have been revised and brought up-to-date so that new names have been added under appropriate classifications and other names changed or deleted.

Part I of the Directory of Oilburner Manufacturers contains a listing of companies classified by the types of oilfired equipment they make. The listings are divided into various types of distillate oilburners, gun, rotary and vaporizing; similar breakdowns on residual oilburners; boiler and furnace-burner units, tabulated by kind of system and type of burner used; oilfired space heaters, ranges and water heaters.

Part II of this section alphabetically lists all manufacturers shown under Part I. Included is the name of the company and complete address, plus, where available, the names of principal executives and the year in which the company was organized.

The next section, also divided into two parts, begins with a complete list of oilburner and heating accessories and equipment listed by type of product. Part II of the section presents an alphabetical name and address list of all the companies classified under the hundreds of headings in Part I.

Final portions of the Guide contain an alphabetical trade name list, covering all sections, and a data section, reproducing some handy and useful reference tables.

The 1949-50 edition of FUELOIL & OIL HEAT'S Buyers' Guide and Industry Directory contains a total of more than 6,500 listings of products made by more than 1,100 manufacturers and is the only publication of its kind, devoted as it is exclusively to product listings for equipment and accessories used by the oilburner and fueloil dealer.

Published by Heating Publishers, Inc., 232 Madison Ave., New York. Size 8¼" x 11¼", 148 pages, price $2.00.

Radiant Heating Book Second Edition Enlarged

RESULTS of more than thirty years' experience in radiant heating, radiant cooling and extensive studies in snow melting are presented in the second edition of "Radiant Heating" by T. Napier Adlam, Vice President, Sarco Manufacturing Co., and consultant on radiant heating.

The first edition, published in 1947, has been expanded to include the newest developments. Material has been added to the chapter on ceiling panels to include enclosed convector panels, gravity warm air panels, and forced warm air panels. The chapter on floor panels cov-

PREFERRED
DRAFT-A-JUSTORS

Cut Fuel Consumption by

10% TO 30%

The *Preferred* Draft-A-Justor is the original, patented Draft-A-Justor . . . improved to include the latest in engineering developments.

Stainless steel bearings and weather resistant metals provide long-life service without breakdown due to rust or wear . . . assure *continuous* fuel savings.

Millions now in satisfactory use.

WRITE FOR DESCRIPTIVE LITERATURE AND TRADE PRICES.

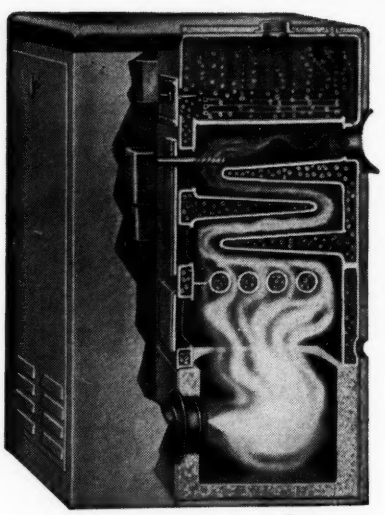
SIZES

Stove, domestic and commercial sizes from 4" to 24" in diameter.

Industrial sizes from 2' x 2' to 5' x 12'.

PREFERRED UTILITIES MFG. CORP.
1860 Broadway, New York 23, N. Y. Boston Office: 839 Beacon St.

Steel HEATING UNIT



Licensed under U. S. Pat.

Write for full particulars about Exclusive Franchise for your territory on our full line of MAGIC-HEAT Boilers and Boiler-Burner Units.

Magic-HEAT

Product of
MARIETTA METAL PRODUCTS CORPORATION
MARIETTA, PENNA.

ers research on the physiological aspects of heated floors, and additional data on floor panels in chicken brooder houses.

The chapter on walls, metal panels, and electrical conductors has been increased to cover important developments in electrical rubber panels, portable electric screens, and radiant glass panels. Added data are provided on embedding electric conductors in the plaster of ceilings and walls to form heating panels.

Because of the great interest in snow melting and the increased number of snow melting installations, the chapter on snow melting has been increased in size to cover practical information for those who plan to design snow melting systems.

In the back part of the book is a set of 78 working charts for the easy direct determination of the pipe sizing necessary, covering both iron or steel pipe and copper tubing. Added to the charts that were part of the first edition, are charts on single or double wood floors, carpeting and felt pads on wood floors, and painted steel wall panel.

Here is a practical book, devoid of the extensive mathematics that one often finds associated with material on the design of radiant heating systems. The charts and data simplify the step by step procedure in the design of such panels.

Both the engineer and contractor, as well as the student, will find the information in this volume easy to understand, and the design procedure easy to follow. It is a book that should be in the library of every heating engineer.

"Radiant Heating" (second edition), by T. Napier Adlam. Cloth bound, 6 x 9 inches, 504 pages. Published November 1949 by The Industrial Press, New York 13, N. Y. Price, $6. Canada and foreign, $6.45.

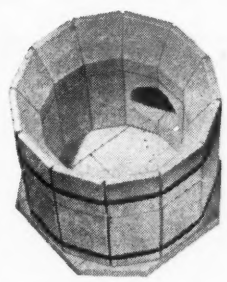
◈

Leslie E. Lewis was elected treasurer, Sid Harvey, Inc., Valley Stream, N. Y., at its annual stockholders meeting. He first joined the company in 1943 as office manager and later served as assistant to the president. Other officers reelected were *Sid Harvey*, president; *Lawrence Harvey*, vice-president and secretary; *Joseph R. Ziminski*, vice president.

Russell E. Mentzer has advanced to the position of district manager, Allied Oil Co., Cleveland, Ohio. He will direct sales in Cuyahoga, Lake, Geauga, Lorain and Ashtabula counties and has been in the employ of the company since 1926. Mr. Mentzer's appointment follows the appointment of *Perry A. Peterson* as manager of sales and the recent advancement of *Frank J. Sargent* to the position of assistant manager of sales.

B. I. Graves, vice president, Tide Water Associated Oil Co. has accepted the chairmanship of the petroleum division, 1950 Red Cross Fund campaign of Greater New York.

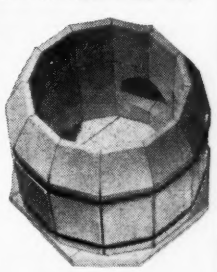
Charles W. Healy, formerly manager of the Louisville sales division, has become general manager, Gulf Oil Corporation's Boston sales division. He will supervise all of Gulf's sales effort in Maine, New Hampshire, Vermont, Rhode Island, Massachusetts, eastern Connecticut and northeastern New York. Mr. Healy has been with the company since 1919, when he was employed as a salesman in Philadelphia.



Instant-Glo
CUSTOM-BUILT
INSULATING BRICK
COMBUSTION
CHAMBER
The Top Quality Installation for Maximum Efficiency

INSTANT-GLO Combustion Chambers are made of special REFRACTORY INSULATING BRICKS which get hot 10 times faster than ordinary fire bricks insuring an INSTANT RED-HOT REFRACTORY SURFACE, resulting in immediate combustion efficiency—result, oil economy 15% greater than ordinary chambers. The insulating quality of the bricks also ELIMINATES LOSS OF HEAT into base of heater.

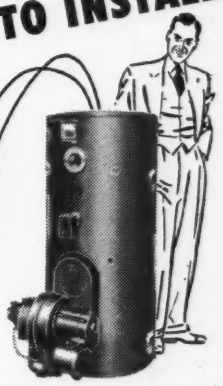
The round shape of INSTANT-GLO Chambers eliminates air pockets and produces LESS COMBUSTION NOISE than the usual fire brick chambers. Each part is taper cut like a key stone so that chamber can not fall in. The INSTANT-GLO Chamber can be installed in one hour or less. All components of each chamber carefully packed in special carton—NO BREAKAGE OR LOSS.



SIZES:
No. 1 or 1A—1.00 to 1.35 G.P.H.
No. 2 or 2A—1.5 to 1.75 G.P.H.
No. 3—2.00 G.P.H.
Model 1A and 2A (*at right*) Special chambers for steel furnace installations.

BOSTON MACHINE WORKS COMPANY
Oil Heating Supplies Division, Manufacturers, Lynn, Mass.

Easier TO BUY TO SELL TO INSTALL
ALDRICH Packaged BOILER-BURNERS



You make more net profit on each sale because compact Aldrich Boiler Burner Units are packaged fully erected, ready to install.

You make more because Aldrich gives your customers a better price, more usable living space, interchangeable oil and gas burners, more heat with less fuel, other important advantages.

UNIQUE NEW "BANTAM," rated at 100,000 BTU per hour is especially designed and priced for modern low-cost homes. 45 in. high; occupies 20x33 in. floor space. Provides heat and domestic hot water in excess of FHA requirements.

SERIES "B" Heat-Pak Units give dependable, efficient performance on all types of steam or hot water heating systems. Six sizes 118,000 to 808,000 BTU. Ideal for residences, commercial and industrial establishments. All Aldrich Boiler Burners also available for hot water supply only.

ALDRICH
ALDRICH COMPANY
103 East Williams St., Wyoming, Ill.
Subsidiary of Breeze Corporations, Inc.

ALDRICH HEAT-PAK PRODUCTS

JOBBERS: You'll make more money with Aldrich—write for facts about Aldrich Boiler Burner Units and Aldrich precision built oil burners; models from .75 to 19 GPH. **DEALERS:** Write for name of nearest jobber.

ANOTHER BREEZE MARK PRODUCT

Manufacturers Activities

Sales Representatives Present At Timken Three Day Meeting

THE ANNUAL SALES MEETING for its regional managers and district sales managers was held by Timken Silent Automatic Div., Timken-Detroit Axle Co., at its general offices in Jackson, Mich., on December 28, 29 and 30. T. A. Crawford, general manager, conducted the meeting, aided by C. A. Cooper, assistant general manager; R. M. Marberry, advertising manager and department heads. The first day's sessions were attended by Walter F. Rockwell, president of the parent organization.

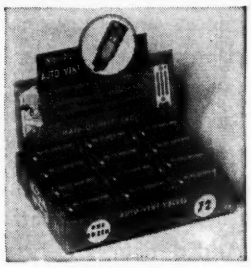
A quick review was made of 1949 sales activities, one of the organization's most successful years, and plans were discussed to increase sales efforts during 1950. Included was the introduction of new models of gas and oilfired domestic heating equipment.

Six regional managers attended the meeting—W. J. Chappell, F. M. Jordon, T. O. Lawler, T. D. McCarthy, M. F. Robbins and G. W. Schultz. The following district sales managers also were present: E. M. Cahill, T. E. Carson, W. H. Craig, R. S. Daniels, E. J. Dwyer, J. H. Eldridge, J. E. Fahl, Hanford Bruher, V. L. Hines, F. H. Huber, J. C. Johnson, J. J. Morro, J. A. Pratt, K. O. Ralph, A. P. Robertson, V. R. Sandberg, A. P. Wandschneider, C. E. Watres and R. D. Whiteman.

Honeywell Opens St. Louis And Binghamton Branches

THE FIRST BRANCH OFFICE to be built and owned by Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn., was occupied recently by Honeywell and its Brown Instruments Div. The new structure, at 4354 Olive St., St. Louis, contains about 6,600 sq. ft. of floor space, divided into 3,600 sq. ft. of general and private office space and 3,000 sq. ft. of material storage area. B. C. Simons is branch manager.

A new branch office also was opened by the company in Binghamton, N. Y., bringing to 78 the total number of offices in this country and Canada. Sam Hauser, previously with the Syracuse office, has been placed in charge of the new branch, which will serve the area encompassing the six counties in New York and Bradford county in Pennsylvania that surround Binghamton.

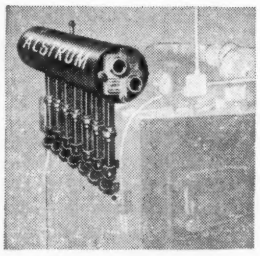


"Merchandiser," attactive counter display announced by Maid-O'-Mist, Inc., Chicago 41, Ill., for packaging its No. 72 Auto-Vent air eliminator. The carton contains one dozen individually boxed valves, designed for venting of hot water convectors, baseboard and free standing radiators.

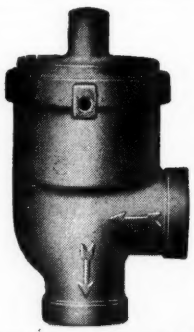
Sid Harvey Acquires More Property; Moves Branch

PURCHASE of the property adjoining the main plant of Sid Harvey, Inc., Valley Stream, N. Y., has been reported by Sid Harvey, president. The plot is 100 ft. by 102 ft., on which is to be built a new

ALSTROM DEPENDABLE
TANKLESS HEATERS
The VACUUMATIC (ILLUSTRATED)
FOR ALL CAST IRON BOILERS



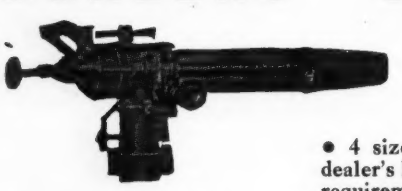
Submerged Coils
For All Steel Boilers
The Counterflow
For Small Homes
Catalogue on Request
The ALSTROM CORPORATION
790 E. 176th Street, Bronx 60, N. Y.



Permits pumping of oil but closes to prevent syphoning in case of suction line break.

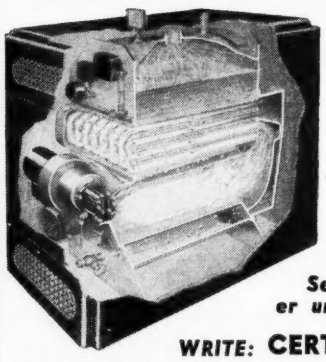
PREFERRED
Anti-Syphon Valves
APPROVED BY
UNDERWRITERS' LABORATORIES, INC.
For Oils Up To No. 5—Valves C5 and C10 are available in ⅜" and ½" sizes.
For Oils Up To and Including No. 5—Valves B5 and B10 are available in ¾" and 1" sizes. (1" size is built up from ¾" size with fittings.)
PR-173
PREFERRED UTILITIES MFG. CORP.
1860 BROADWAY, NEW YORK 23, N. Y.

DEALERS' DELIGHT



A beauty of a *heavy oil* burner that rarely needs attention once installed.
• 4 sizes to take care of every dealer's large or small boiler room requirements.
FULLY AUTOMATIC OPERATION with ANY GRADE OF OIL.
• A versatile performer and money-maker for over 25 years.
SIMPLEX PNEUMATIC TURBINE TYPE HEAVY OIL BURNER
SIMPLEX OIL BURNING SYSTEMS
SINCE 1910
SIMPLEX OIL HEATING CORP.
11 PARK PLACE • NEW YORK 7, N. Y.

CERTIFIED Steel Boilers



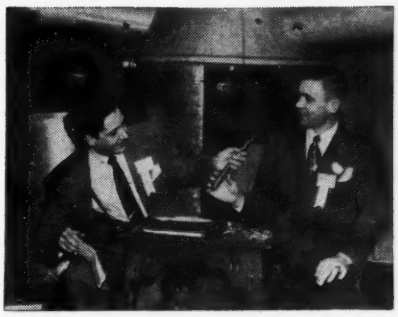
W.B. SERIES: Scotch Marine Boilers of efficient three (3) pass design. Flame in fire-tube and built-in combustion chamber is completely surrounded by water. Wet base. Amazingly quiet operation. Home owners report 50% fuel savings. Sizes for all domestic, commercial and industrial applications.
Sell "Certified" efficiency boiler units and close sales easier!
WRITE: **CERTIFIED BOILER WORKS**
35 West 33rd Street New York, N. Y.

two story 20 by 40 ft. building. The house now on the property will be left there and the two car garage moved to make room for the new building. Contract already has been let for the new construction, which will be connected to the present buildings and is to be occupied on both floors by paint shops. These also will serve the building to be built in the future on the rest of the plot.

A new location for the New Brunswick, N. J. branch store was occupied on January 1, according to M. P. Bernard, president, Sid Harvey of N. J., Inc. The new store is at 72 Raritan St., Highland Park, N. J., just across the river from New Brunswick on the main street leading into town. The site will provide larger parking facilities than the former location.

Viking Party Introduces Cooperative Sales Plan

A PARTY and presentation, sponsored by Viking Air Conditioning Corp., Cleveland 2, Ohio, on December 13 was held halfway between conventions of the National Warm Air Heating and Air Conditioning Association and the National Heating Wholesalers Convention to permit members from both to attend. A humorous skit served as the vehicle to impart helpful sales suggestions for heating wholesalers and dealers in selling blower filter units. The "have a cigar" sales technique was contrasted with "planned" sales promotion procedure on blower-filter package units, including actual demonstrations of selling and installing the units.



Dick Gang, *sales promotion manager of Viking's Blower Division, demonstrates the "Have a cigar" sales technique to salesman Bob Briggs, who played the part of a furnace dealer.*

Viking unveiled a cooperative sales promotion and advertising plan to include manufacturer participation with dealer and wholesaler in local advertising. Also shown were pictures of window displays and other results of testing the campaign in the Cleveland territory before offering it to wholesalers and dealers.

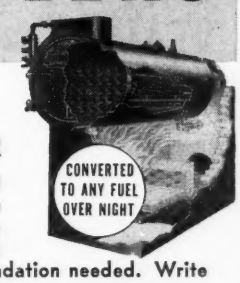
Dick Gang, sales promotion manager, wrote the skit and acted as master of ceremonies. He was assisted by Bob Briggs, salesman from Toledo; Jack Green, Cincinnati salesman; Carl Culler from the Blower Service Dept. and Lyall Bush, New England salesman.

Automatic Firing Buys Gemco Air Conditioning

ACQUISITION of the Gemco Air Conditioning Div., General Eng. & Mfg. Co., St. Louis has been announced by the Automatic Firing Corp., St. Louis, Mo. The plant and facilities of General have been purchased by Rafco Realty Co. and Automatic Firing will occupy a major portion of them under lease. The factory, comprising 110,000 sq. ft. of buildings under roof and 8 acres of land, has been described as one of the most complete in the Middle West.

On January 16 the company com-

Dutton BOILERS
SINCE 1880



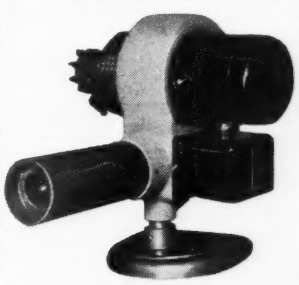
ECONOMIST
INSTALL YOUR OWN BURNER

Designed for Oil, Gas, Stoker or Hand Firing . . . supplies without burner if you wish to install your own. HRT type in a fully portable unit; bricked and insulated in steel case at factory. No special foundation needed. Write for catalog.

Serving industries for 70 years—1880-1950

HOT WATER AND STEAM GENERATORS FOR HEATING, PROCESSING OR POWER
THE C. H. DUTTON COMPANY
625 GIBSON ST. KALAMAZOO, MICHIGAN

HOW TO STOP FUEL WASTE



Imagine a bunsen burner with no central air-hole or a stoker without air driven to the center of the fuel bed.

Only Airflame provides means to drive air into the CENTER of the oil mist ball. Less waste. More Heat.

Dealers, Distributors, Mfg. Agents write

AIRFLAME, INCORPORATED
648 McALISTER AVENUE WAUKEGAN, ILL.

Solenoid
STAINLESS STEEL
Valves
FOR OIL BURNERS

For increased customer satisfaction, always install Skinner Valves on new burners and as replacements. Soft synthetic inserts assure long life without leakage. Spring loading positively opens or closes valve in any position. Coils impregnated to withstand moisture. Available for drip eliminator, cut-off, pressure relief, gas ignition, shut-off, shut-off metering, shut-off with manually adjustable by-pass. All models for continuous or intermittent duty.

New Bulletin No. 492 contains complete data and prices. Write for FREE copy.

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
141 Belden Ave., Norwalk, Conn.

pleted removal of its general offices to new quarters at 4417 Oleatha Ave. and revealed its plans to relocate factory equipment within the next few weeks.

Gemco has marketed 3, 5, and 7½ ton air conditioning units; Automatic Firing makes a line of equipment that includes gas and oil conversion burners; domestic and commercial stokers, combination gas-oil conversion burners, burners and furnaces for liquefied petroleum gas.

Hugo Wurdack, president of Automatic Firing, refers to the purchase as one made after a careful study of the air conditioning market. He reveals also that plans call for early addition to the line of ½, ¾ and 1 ton capacity units.

Penn Switch Relocates Its Detroit, Cleveland Offices

EFFECTIVE November 10, the Detroit district office, Penn Electric Switch Co., Goshen, Ind., was moved to 9551 Grand River Drive. G. O. Sanders is district manager of the office, which handles the company's complete line of automatic controls.

More recently the company's Cleveland district office has moved to 728 Film Exchange Bldg., Cleveland 14. W. S. Lossie continues as district manager.

Certified Heat Named Metromatic Distributor

APPOINTMENT of a New York and New Jersey distributor has been announced by the Metromatic Mfg. Co., Everett, Mass. Certified Heat & Power Co., New York 1, N. Y., is handling the company's Metropac unit, oilfired warm air furnace with built-in water heater, and maintains a display at the Architects' Samples Corp., New York.

Iron Fireman Representatives Complete Two Weeks Training

AN INTENSIVE two-week training session was held at the Cleveland plant of Iron Fireman Mfg. Co., beginning January 16 and ending on January 27. More than eighty field sales representatives, division engineers, branch managers and engineers from the United States and Canada attended. Discussions of and instructions in the application, installation and servicing of the complete line, including domestic, commercial and industrial oilfired equipment, made up the program.

Famous Furnace Company Named Toridheet Distributor

THE FAMOUS FURNACE CO., Cleveland 4, Ohio has been named exclusive distributor in twenty-seven counties of northeastern Ohio by the Toridheet Div., Cleveland Steel Products Co., Cleveland 2, Ohio.

The company will feature the complete line of Toridheet heating units, gas and oil conversion burners and oilfired water heaters. It is to operate in all counties east of and including Erie, Huron, Richland, Marion, Delaware and north of and including Knox, Coshocton, Tuscarawas, Harrison and Jefferson.

Armstrong Furnace Launches Winter Sales Promotion

A CAMPAIGN, recently announced by Armstrong Furnace Co., Columbus, Ohio, has been prepared to offset the seasonal drop in sales which has been typical of the industry. In presenting the campaign to Armstrong distributors

R & I Oil Burner Dealer Supplies

Combustion Chambers
They heat fast, withstand high temperatures, are medium weight and low priced.

Hearth Cement
For pouring special shapes, hearths of rotary burners and floors of chambers.

#3000 Refractory Cement
For patching, setting and washcoating.

Pakinsul Rockwool Insulation
For packing between combustion chambers and cast-iron base.

Your supply house has these R & I products. Write us for Bulletin OB-101.

R&I

REFRACTORY & INSULATION CORP.
116 Wall St., New York 5, N. Y.

ATTENTION
DEALERS • MANUFACTURERS
This is the Answer to your Needs for Trained Personnel
Qualified graduates of the
YMCA TRADE & TECHNICAL SCHOOL
Automatic Oil Heating Course Now Available
Trained in fuels, combustion, installation, heating surveys, maintenance and electrical controls.
Write Today — Placement Office
YMCA TRADE & TECHNICAL SCHOOL
229 WEST 66TH STREET, NEW YORK CITY

MORE AND MORE
DEALERS ARE SWITCHING TO
HEIL
Automatic Heat
Write The Heil Co., Milwaukee 1, Wis.

recently, H. G. Hays, sales engineer, explained that the obvious time for furnace trouble to show up is during the winter and that with a little planning a new furnace can be installed without more than a few hours shut-down in heating.

The material, available to dealers through their jobbers, includes direct mail pieces, mats of complete newspaper advertisements, window posters and streamers, recorded radio spot announcements, all designed to let prospects know how quickly a new furnace can be installed in mid-winter.

Renick & Mahoney Issue New Oil Equipment Catalog

A 100 PAGE CATALOG, covering a complete line of equipment for the storage, transportation and marketing of petroleum products is being mailed by Renick & Mahoney, Inc., New York 6, N. Y.

This new silver anniversary catalog also contains bulk plant layouts and installation piping diagrams of storage and truck tanks, with other useful information for the oil distributor and oilheating dealer. Interested organizations can secure free copies of catalog No. 50 by writing to the company at 114 Liberty St. on their letterhead.

Personnel Changes Made By Morrison Steel Products

AT THE ANNUAL MEETING of the board of directors, Morrison Steel Products, Inc., Buffalo, N. Y., Jacob Morrison was elected to the chairmanship of the board and Samuel Morrison advanced to the presidency. Jacob Morrison, who founded the company in 1912, has been its president since its incorporation in 1920. Samuel Morrison, executive vice president for the past ten years, has worked in every department of the factory and later entered the sales promotion division. He gradually assumed executive and administrative duties and was put in charge of the contract stamping division, a position which he retains.

Other organizational changes were the appointment of Norman H. Siegel as chief engineer and Roy C. Timm as director of quality control.

The company produces contract stampings, primarily for the truck industry, a line of Mor-Sun domestic forced warm air furnaces, Carry-All service and utility truck bodies and has recently added a sectional metal residential overhead garage door to its line. New building facilities on its 12½ acre land are planned to handle an increased volume of business.

Cromwell Catalog Describes Printing for Fueloil Dealers

A TWELVE PAGE CATALOG, available from Cromwell Printery, Inc., Albany, N. Y., lists an ddescribes the printing services it offers the fueloil dealer. They include fueloil meter tickes, statements, tank charts, envelopes, letterheads and other printed forms.

Special forms are prepared for use with Bowser, Brodie and Neptune meters, with other types available for other makes of fueloil meters. The tickets can be supplied in two or three part forms, in both of which the first sheet is printed on white Print-Thrue paper, or regular white bond, if desired. On two part forms, the second sheet is card stock, but on three part forms it is on canary paper, and the third sheet is reproduced

SOOT-GO SOOT DESTROYER

STILL THE BEST for cleaning oil and gas-fired heating plants.

EFFICIENT AND ECONOMICAL TO USE

ALSO:

SLUDGE-GO for Fuel Oil Tanks.
RUST-GO for Boiler Water Cleaning.
EZ-E WELD for Sealing Leaky Boilers.

Write for name of nearest jobber

KALMIDE CHEMICAL CO., INC.
17 East 42nd St. New York 17, N. Y.

SHALLO-WELL
OIL-FIRED FLOOR FURNACES
ONLY **34** INCHES DEEP
BTU CAPACITIES OF
* 50,000 * 65,000 * 75,000
Write for Details!

ORAN COMPANY
2230 S. THIRD STREET
COLUMBUS 7, OHIO

NOW is the TIME to "CLEAN-UP"
with a
GRAND RAPIDS FURNACE CLEANER

Act Now! Get in on this year's cleaning profits. *Order a Grand Rapids Furnace Cleaner.*

IT'S FAST—Handles twice as many jobs as the ordinary furnace cleaner.

IT'S THOROUGH—High velocity suction completely removes ashes, soot, scale and dirt from every type of heating plant.

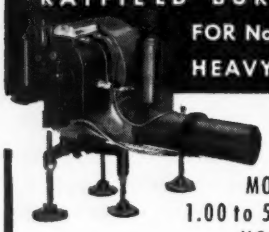
IT'S COMPLETE—A packaged unit with practical cleaning attachments designed for fast, easy cleaning.

IT'S PROFITABLE—The trouble-free operation and speedy service of the Grand Rapids Furnace Cleaner puts extra profits in your pockets.

Send today for complete information about the Grand Rapids Furnace Cleaner.

DOYLE VACUUM CLEANER CO.
233 Stevens St., S.W. Grand Rapids 7, Michigan

RAYFIELD BURNERS FOR No. 4 or No. 5 HEAVY OILS



MODEL JR.
1.00 to 5.00 GALS./HR.
MODEL D4
3.00 to 12.00 GALS./HR.

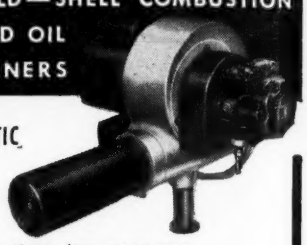
1. Fully Automatic
2. Self Cleaning Nozzle
3. Self Lubricating
4. All Electric Operation
5. Pays for itself from savings
6. Burns the cheaper No. 5 oil

RAYFIELD
AUTOMATIC

HEAT RECLAIMERS

1. Low in Price—Automatic—Easy Installation
2. Installs on Boilers, Furnaces or Stoves
3. For use with Coal, Gas, Oil or Wood
4. Increases output of ANY gravity warm air furnace
5. Heats Basements, Play Rooms, Garages, etc.
6. The hotter the stack—the more heat reclaimed
7. Saves wasted heat now going up the chimney

RAYFIELD—SHELL COMBUSTION HEAD OIL BURNERS



for CATALYTIC OILS TO #3 GRADE
2 MODELS
1.00 to 3.00 GALS./HR. CAPACITY

1. Shell Head Economy 12 to 15% CO_2
2. Clean boilers with perfected combustion
3. Burns Catalytic oils easily
4. Quiet—No Vibration or pulsation
5. Cuts user's oil bills 14 to 36%
6. The ideal replacement oil burner

C. L. RAYFIELD COMPANY • 2010-18 SO. HALSTED ST. • CHICAGO 8, ILL.

on the card stock. Weather-proof, double face carbon paper is standard on all meter tickets and a weather-proof holder is furnished with each order for quantities of 5,000 or more.

Cromwell has been specializing in this type of work for some time and has established a system whereby all orders received by the tenth of the month are shipped out by the end of the month. In addition, an ample supply of blanks is kept in stock for immediate or emergency shipment.

Webster Electric Company Celebrates 40th Anniversary

WEBSTER ELECTRIC CO., Racine, Wis., celebrated its fortieth anniversary recently with open house for employees and their families. Seventeen hundred visitors were greeted by President S. Arthur Loeb, Vice-Presidents P. G. Crewe and A. J. Kleckner and other company officials.

Assembly lines were working and models of Webster products were on exhibition. These Webster fuel units and transformers, Teletalk intercom systems, Ekotape recorders, Thermodrive heat regulating units and Featheride pickups and tone arms.

President S. Arthur Loeb *(left) and Vice-President P. G. Crewe (right) welcome the Irv Hammacher family to Webster's 40th birthday party.*

Ko-Z-Aire Realigns Its Distribution and Sales

A REALIGNMENT of distribution, sales and advertising has been announced by J. J. Hildebidle, general manager, Ko-Z-Aire, Inc., Red Oak, Ia., with all sales and manufacturing activities directed from the general offices.

Factory representatives for the company's line of gravity and forced air gas and oilfired units will be located in the larger cities throughout the country, with products marketed through a network of about 50 key regional distributors. Some representatives already have been chosen, with selection of all scheduled for completion shortly after the first of the year.

Preliminary plans have been completed for an advertising campaign, with a catalog on the line under way and scheduled for distribution early in the spring. Plans for other forms of advertising also are being formulated.

Instrument Laboratory Making Viscos-o-trol Preheaters

THE MANUFACTURE and sale of Viscos-o-trol preheaters has been taken over by the Instrument Laboratory, Inc., Seattle, Wash. from the Superior Engineering Co., Seattle. Instrument Laboratory, a specialty instrument and industrial manufacturer, is setting up a dealer organization throughout the United States to handle sales and distribution.

The Viscos-o-trol heaters are for use on horizontal rotary or mechanical atomizing oilburners, with capacities up

Looking for Results?

TRY KEK on that TOUGH JOB
GET ANY BOILER CLEAN
SAFELY and SURELY

TRY OUR OTHER QUALITY PRODUCTS TOO!

- KENBRIC Soot Remover — Bricks and Rods
- KENITE Boiler Repair — Permanent, Odorless
- KENITE Joint Compounds — Non-Hardening
- KENITE Oil Pipe Plastic for Oil, Gas & Refrigerants

Ask Your Jobber or Order Direct. Jobbers Protected.
Write for FREE BULLETINS

KENITE LABORATORY
Madison New Jersey

Cleans Chimneys Permanently

Stops down draft—prevents furnace explosions. Satisfaction guaranteed. This copper pot (with character) mailable.

For FREE BOOKLET and Dealer Proposition
Write
WIGWAM FLUE TOP CO.
ABINGTON MASSACHUSETTS
SAVES THREE KINDS OF FUEL

SAYBOLT Calibration Prevents Profit Leaks!

LOSSES due to inaccuracies in meters and tanks can be prevented by having your fueloil meters, tank trucks, and bulk storage tanks accurately calibrated.

Small daily losses, when multiplied by a year's operation, can cost you hundreds of dollars annually. Our calibration service safeguards you against these unseen leaks in your profits. The cost is paid for many times over in fuel savings.

There are more than 50 Saybolt offices to serve you in the United States and foreign ports. Your request will bring complete information.

E. W. SAYBOLT & COMPANY

Serving the Petroleum Industry for Over Half a Century

265 BAYWAY ELIZABETH 2, N. J.

to 150 boiler horsepower. The heaters are described as capable of controlling oil temperatures to within two degrees, without carbonizing or sludge formations.

Bedard Organizes Heating Industries

EARL L. BEDARD has organized Heating Industries, Peoria 4, Ill., a new company formed to manufacture oilburners and heating boilers. The equipment will be marketed through factory representatives and export agents. In addition, the company plans to market finned tube radiation for radiant panel heating.

Mr. Bedard has been in the heating business for twenty-two years and has had experience in the design and manufacture of burners and boilers. He has been associated with Oil-Elec-Tric Co., Minneapolis; Minneapolis - Honeywell Regulator Co.; Aldrich Co., Wyoming, Ill., and most recently was vice president and general sales manager, Mt. Hawley Mfg. Co., Peoria.

Data for Oilburner Jobbers Included in Biddle Reports

BUYING GUIDANCE offered by Biddle Purchasing Co., New York 8, N. Y., includes a specialized service designed for distributors and wholesalers of oilburner, air conditioning and refrigeration supplies. The company, founded in 1879, was begun to keep distributors abreast of market conditions, prices, changes and contemplated changes. Since its inception, expansion and refinements have been incorporated into its services and today offices are maintained in New York, Baltimore, Meridian, Chicago, Seattle and San Francisco.

Biddle also publishes a weekly *Bulletin,* specialized to fit the oilburner business and furnishes a price card system, where each line is on a separate card, listing sources of supply, market prices, freight allowances, cash discounts.

The overall service includes location of merchandising desired, digested analyses of legislation affecting a business, provides facilities to dispose of overstocks and offers pick-up facilities in important producing and distributing centers.

Kenite Moves Operation To Madison, New Jersey

REMOVAL of Kenite Laboratory, Inc., from New York City to Madison N. J. has been completed. Entire facilities of the office and factory have been relocated.

Products being offered include Kenbric soot remover, Kek boiler cleaner and steam conditioner, Kenite boiler repair powder and compounds for sealing joints in lines.

American Air Filter Company Merges with Herman Nelson

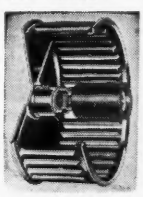
THE MERGER of American Air Filter Co., Inc., Louisville, Ky., manufacturers of air filters and dust collectors, and Herman Nelson Corp., Moline, Ill., one of the oldest producers of heating and ventilating equipment, has been announced. The merged company's principal offices

Standard in the Oil Heating Industry

LOVEJOY L-R FLEXIBLE COUPLINGS

Always reliable. Fool-proof. Trouble-free. For Pumps, Fans, Blowers, Power Transmissions from motor to equipment.

Ask for details and prices.



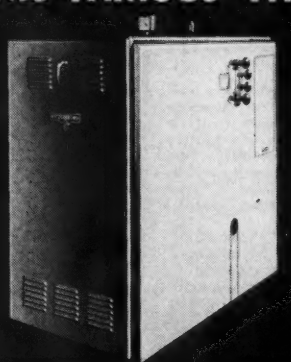
LOVEJOY FLEXIBLE COUPLING CO.

Mfr. of Lovejoy Variable Speed Transmission Equipment and Lovejoy Universal Joints.

5012 W. Lake St. Chicago 44, Ill.

Save money. Use fans equipped with L-R Jaws.

The **FAMOUS FITZGIBBONS "400"**



THE ARISTOCRAT OF STEEL BOILERS BUILT BY BOILERMAKERS IN A BOILER SHOP

SBI

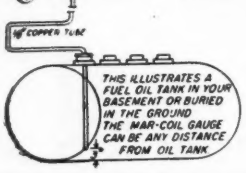
Fitzgibbons Boiler Company, Inc. 101 PARK AVE. NEW YORK 17, N. Y.

MAR-COIL HEATER CO.

MAR-COIL FUELOIL GAUGE — for inside or outside oil tanks. Can be installed at any height or distance. Like a thermostat in appearance.

MAR-COIL SILENCER —guaranteed to eliminate water hammer.

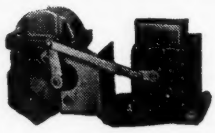
MAR-COIL RIGID BOILER STAND. Sizes to fit 12" to 54" boiler diameters.


THIS ILLUSTRATES A FUEL OIL TANK IN YOUR BASEMENT OR BURIED IN THE GROUND
THE MAR-COIL GAUGE CAN BE ANY DISTANCE FROM OIL TANK

Ask Your Jobber for MAR-COIL Products
SOLD THROUGH JOBBERS ONLY

200 PATERSON PLANK ROAD — UNION CITY, N. J.

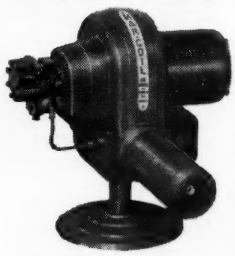
MAR-COIL HEATER CO.



MAR-COIL MOTORIZED STEAM GATE VALVE. Made from 1½" to 6".

MAR-COIL TEMPERING VALVE. Sizes from 3/4" to 2".

MAR-COIL OIL BURNER Made from 1 to 25 gals.



Ask Your Jobber for MAR-COIL Products
SOLD THROUGH JOBBERS ONLY

200 PATERSON PLANK ROAD — UNION CITY, N. J.

and headquarters will be in Louisville, but the Nelson organization will continue to operate its facilities in Moline and will be known as the Herman Nelson Div. of the American Air Filter Co.

W. G. Frank, executive vice president and Richard H. Nelson have been elected directors of the combined firm; Richard H. and Robert W. Nelson have been elected vice presidents and E. G. Mason, of the Herman Nelson Div., has been named assistant secretary and assistant treasurer.

White Calendar Depicts The Role of Transportation

THE 1950 CALENDAR of the White Motor Co., Cleveland 1, Ohio not only presents the company's latest products, including the new White 3000 series, but also pays tribute to truck-using industries for their contribution to America's high standard of living.

Six pages and six pictorial presentation combine to tell an overall story of the role of motor trucks and White vehicles in particular. The artwork occupies half the page, the calendars and company name the other half. The calendar is offered in full color in giant sizes for large offices and 17 x 10½" calendars for smaller offices.

Hajoca Holds General Meetings; Opens Branch

A GENERAL MEETING of branch house personnel and home office executives was held on January 13 and 14 at the Warwick Hotel by Hajoca Corp., Philadelphia 1, Pa. The gathering was followed by a series of eight one-day regional sales meetings, the last of which was to be held on February 11 at Jacksonville, Fla.

President W. A. Brecht conducted the general meeting and planned no definite program, but threw the sessions wide open to forum-type discussions, with every member of the organization invited to contribute his thoughts on company operations. C. C. Lowry, vice president in charge of general sales, was in charge of the regional meetings, assisted by a team of E. W. Breese, industrial sales manager; S. M. Stroh, plumbing and heating sales manager; R. B. Davis, manager of refrigeration sales and E. C. Hoeflich, advertising manager. Present at each meeting were branch house managers and salesmen from the regional areas.

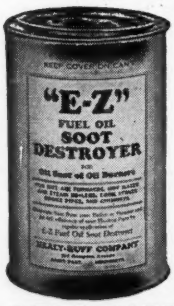
Hajoca anounced also the recent purchase of Rowland Supply, High Point, N. C., and its establishment as the thirty-second full scale branch operation. O. O. Rowland, former owner, will remain in an advisory capacity for two years and C. B. Hurley, formerly with the Rowland company, has been appointed branch manager for Hajoca. All policies are to remain the same and no other changes in personnel are planned.

Tempmatic Sponsors Detoit Product Merchandise Show

A THREE DAY Indoor Comfort Merchandise Show was sponsored January 10 to 12 by Tempmatic Wholesalers, Inc., Detroit, Mich. The show, held at the Fort Shelby Hotel, was attended by dealers from the Detroit and southern Michigan area and was arranged to afford manufacturers an opportunity to exhibit their 1950 lines to prospective dealers, in the area served by Tempmatic.

T. Hollister Mabley, vice president, stated the purpose of the show was to

E-Z MORE PROFIT PER Service Call



When the oil burner Servicemen answer a call it is easy many times to add furnace cleaning to the job. E-Z Fuel Oil Soot Destroyer (for fuel oil soot only) does a thorough, clean, safe job in just one application. Takes but a few minutes. Keep a 5 lb. Can on each service truck, always. Stock the 1 lb. Cans for sales to your customers. If your Distributor cannot supply you, order direct.

No. 1 Pkg. approx. 1 lb. . . . List $1.00 ea.
No. 5 Pkg. approx. 5 lbs. . . List $4.50 ea.
Liberal discount to bona fide Servicemen.
Special discount to Distributors on quantity purchases, allows for extending regular discount to Dealers and Servicemen.

HEALY-RUFF COMPANY
797 Hampden Avenue • St. Paul 4, Minnesota

For More Profitable Jobs
NU-TROJAN Combustion Chambers
A Product of McLeod & Henry Co., Inc.

A. R. WEBBER CO., INC.
DEPT. 61
NEW HAVEN 11, CONN.

Nu-Trojan Chambers have the features that lower installation costs and reduce servicing costs to help you secure profitable jobs. Has few parts, does not need steel bands to hold them in place. First quality "Steel Mixture" Pennsylvania fire clay. Fusing point 3180° F. Write Dept. 61 for details.

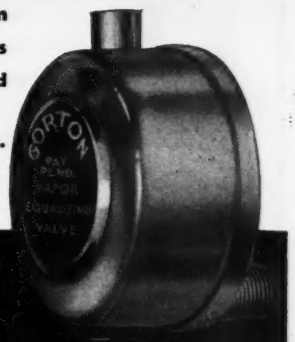
EVERYTHING FOR THE OIL BURNER TRADE

"BEST FOR EVEN HEAT DISTRIBUTION"

"We use the GORTON SYSTEM of Vaporizing and Equalizing existing steam heating systems on all steam installations, and find them to be the only valves that will give equal distribution of heat to all rooms, without complaints and with the greatest economy."

Says Mr. Albin H. Koenig, Pres.
Koenig & Goller, Inc.
Staten Island, New York

GET THE FACTS TODAY!
Write for BULLETIN No. 117.



GORTON HEATING CORPORATION
Manufacturers of High Grade Heating Equipment Since 1887
CRANFORD NEW JERSEY

overcome the slump in business activity during the first of the year and it was successful in that many dealers contracted to handle one or more of the lines on display. These included packaged air conditioning, gas and oilfired heating equipment. The favorable response to the show has prompted Tempmatic to schedule a similar exhibit early next year.

White-Rodgers Opens Philadelphia Office

ANNOUNCEMENT of the opening of a new office at 210 Long Lane, Upper Darby, Pa., has been made by The White-Rodgers Electric Co., St. Louis 6, Mo. The office, which will service Philadelphia and the surrounding area, will be under the supervision of H. F. Killinger, district manager.

Campbell Heating In Large Expansion Program

A LARGE SCALE EXPANSION PROGRAM is being completed by Campbell Heating Co., Des Moines, Ia. Offices of the company already have moved to a new, modern building, whose 5,000 sq. ft. of floor space are occupied by the sales, engineering and business offices. A new plant, measuring 80 by 240 ft., is nearing completion and will house the sheet metal shops and provide additional space for materials storage. The original, smaller Campbell plant now will be occupied by the heater fabrication and welding shop.

The new building will feature a new type warm air heating system, employing tunnels in the floor through which heated air will be circulated. The tunnels will be parallel to the exterior walls and 3 ft. in from the walls. Heated air will be carried from the tunnels through hollow tiles to a continuous baseboard outlet in the exterior wall.

National Revises Catalogs On Heat Extractor Boilers

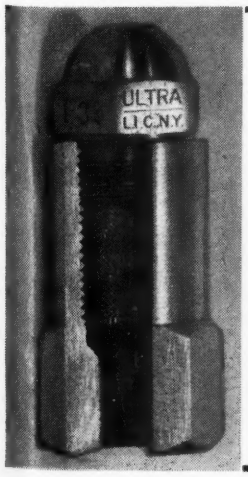
REVISED CATALOGS, prepared by National Radiator Co., Johnstown, Pa., cover a wide range of National Heat Extractor cast-iron boilers. Catalog No. 561 illustrates and describes the "100" series boilers, made in types for automatic and hand firing. The boilers are for steam or hot water heating systems, for installation in the limited space normally provided in smaller homes.

Catalog No. 562 is devoted to the "200" series, sized for hand and automatically fired steam or hot water heating systems in larger homes and commercial buildings. Both catalogs illustrate operating features of the boilers, accompanied by complete specifications, ratings, dimensions and operating data, with information on domestic water heaters used with the boilers. The models listed in the two 6-page catalogs have I-B-R steam ratings from 170 to 880, 270 to 1410 sq. ft. of hot water.

Torrington Fan Delivered By Helicopter Pick-Up

THE RESEARCH LABORATORY of Torrington Mfg. Co., Torrington, Conn., was well advanced with work on an air impeller for Sikorsky Aircraft Co. when it was found necessary to change specifications. Urgency and secrecy called for delivery of the unit in person and quickly.

Torrington's laboratory burned the midnight oil, hand-built another sample



Burn Catalytic Oil More Smoothly With
ULTRA
OIL BURNER NOZZLES
PARTICULARLY UNLIKELY TO PLUG AT LOW G.P.H. RATES.

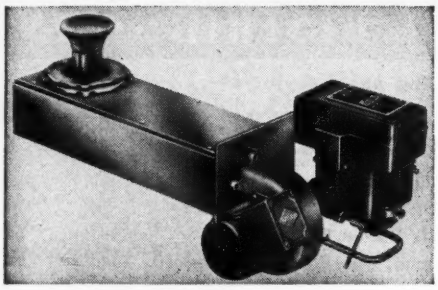
A stainless-steel nozzle made of 3 parts: strainer-disk-tip. Precision-built in design and construction. The ultra nozzle performance is reflected in absolute uniform atomization.
Write for details TODAY!

Ultra Metal Utilities Corp.
27-07 ASTORIA BOULEVARD
LONG ISLAND CITY 2, N. Y.

Sundstrand
an oil burner for every heating job

- All Surfaces Machined
- Precision Made Throughout
- Completely Fire Tested
- Variable Tube Lengths To Fit YOUR Requirements
- Flange Mounted
- Meet All Local And State Requirements

Write Us For Complete Information
SUNDSTRAND ENGINEERING COMPANY
ROCKFORD ILLINOIS



Write Us Today About

THE BURNER FOR LOWEST COST HEATING!

Look for the

KRES-KNO **Ball Flame**

VAPORIZING OIL BURNER

Low Initial Cost • Completely Automatic
Economical • Trouble-Free • Underwriters' Lab. Listed

KRESNO-STAMM MFG. CO. (America) Inc.
PALISADES PARK, N. J.
Kresno-Stamm Manufacturing Co., (Canada) Ltd.
1452 Drummond St., Montreal 25, P.Q. — Factory: Granby, P.Q.

and had it ready for helicopter pick-up the following day. Sikorsky personnel landed at the plant, were given the impeller by C. I. Crawford, Torrington laboratory technician and W. E. Cashen, laboratory director.

Mar-Coil Heater Names Three Sales Representatives

THREE NEW REPRESENTATIVES have been added to the staff of Mar-Coil Heater Co., Union City, N. J. Archer F. Cummings, Rochester, N. H., is representing the company in Maine, New Hampshire and Vermont; Morris Chapman, Boston, is the representative in eastern Massachusetts and the state of Rhode Island; George T. Furlong, West Hartford, Conn., in the state of Connecticut and western Massachusetts.

Sid Harvey Employees Share in Record Bonus

SID HARVEY, INC., Valley Stream, N. Y., and associated companies have distributed more than $40,000 to 223 employees as their share of the 1949 profits. Profit sharing has been in effect at the company for years and since the 1949 volume was the highest in its history, the profit sharing bonus also was the largest. In addition, most of the employees are stockholders and have participated in regular dividends on preferred stock declared at the year's end.

Reporting on last year's volume, the company revealed that 93,295 oilburner parts had been rebuilt in their Valley Stream, N. Y., repair department. The oil carrying parts of burners, i.e., pumps, regulating valves, magnetic and float valves, accounted for the greatest portion of the total, 40,758 of them being rebuilt. Next in volume were relays and combustion controls with a total of 28,410, followed by operating and limit controls with 13,489, transformers and motors totalling 5,893 and 4,718, respectively.

Infra Announces Revised Thermal Insulation Book

A NEW EDITION of "Simplified Physics of Thermal Insulation," completely revised, is available without charge from Infra Insulation, Inc., New York 7, N. Y. Alexander Schwartz, the author and president of Infra, has gained a reputation for his knowledge of the subject, and for his graphic yet simple presentation.

The book incorporates facts about heat transfer, vapor and vapor flow, condensation and radiant heating, the findings, research and interpretations of Mr. Schwartz, and adds extracts from reports and observations of outstanding authorities. It is textbook in scope, with the subjects discussed in precise, down-to-earth language, covering the use of mass fibrous insulation and reflective types, comparing the kinds and telling where and how to use them.

Photographs, charts and diagrams illustrate the text, with the Infra "Chart of Thermal Insulation Values" revised to show latest insulation factors.

BUTLER MFG. CO., Kansas City 3E, Mo., features its complete line of petroleum trailer tanks in a catalog being supplied free upon request. The literature explains construction of Butler tanks, discusses their features, sizes and designs available and data useful in selecting proper trailer tanks.

MONEY

• It's smart business to use our money to make more money for yourself. Our charges run around 1% of your sales even if you have to borrow on all of your receivables all of the time. They are proportionately less if you don't need to borrow the maximum.

Ask us for details

LEXINGTON CORPORATION
Specialists in Oil Financing
M. S. Lurio, Pres.
10 Milk Street Liberty 2-6878 Boston, Mass.

NOW'S the time
Get a BINDER
for 1949 copies of
FUELOIL & OIL HEAT

$3 REMEMBER when you remembered an article in FOH and you wished that you had kept the issue in which it appeared? Get a binder and have good reference material at hand.

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Oilheating Trends

(*Continued from page 11*)

hardly expect simple maintenance to run as high as a half cent a gallon. To get more useful figures on this some individual studies will be made during the year.

KEROSENE SHIFTS: Again trying to check the curious antics of the kerosene demand figures of recent months, we were asked to get an estimate on the number of oilburner installations in 1949 where an oilfired central heating plant was installed in a home that had formerly used oil space heaters or range burners for the entire heating job. The answer seems to be about 18,554 such installations. This brings up the question as to where this lot would fit into the types of installations enumerated in the opening paragraphs of this monthly report. They are included in the figure of 340,073 conversions from other fuels, for the reason that this is the catch-all classification after the other types have been identified.

DEALER COMMENTS: Typical comments on questions of the month are these . . . "We have a lot of competition from dealers who are installing jobs at labor and material cost, figuring on oil business to make up" . . . "The peddler trade is giving free service in parts for fueloil contracts" . . . "Prices of transformers and motors have increased, steel boilers and burner prices will increase this year; this is caused by increase of steel prices. Burner business is good and most dealers in our market are pushing advertised brands" . . . "The steel strike slowed business in our town, except for paint and hardware stores, as many of those idle used the time to paint and fix up their homes" . . . "1950 looks like a good oilburner year" . . . "In a recent survey of 16 fueloil marketers in Seattle, the average truck maintenance cost was .33¢ per gallon."

◈

G. Kenneth Fisher has joined Sheffler-Gross Co., Inc., Philadelphia 6, Pa., as a general partner. Mr. Fisher, with the company since 1940 as a sales engineer, served with the Army Air Force between 1942 and 1945. Sheffler-Gross is sales outlet for a dozen firms, including Buffalo Meter, Cuno Engineering, Liquidometer and Owens-Corning.

Floor Furnaces

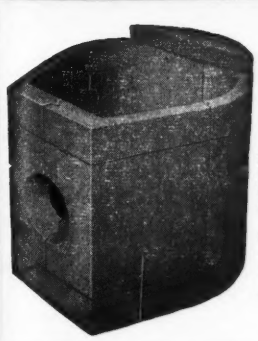
(*Continued from page 45*)

rating of oil-fired floor furnaces establishes minimum requirements calculated to assure a reasonable degree of satisfaction both as to the economy of operation, durability and quality of the performance of such equipment.

Commercial Standard CS113-44 for oil-fired floor furnaces specifies a minimum efficiency for rating purposes of 70 percent. Operating economy can be expected to be satisfactory.

With proper placement within the house and with application restricted to small dwellings planned for good overflow circulation and with adequate insulation to offset some of the inadequacies of the type of heat distribution characteristic of the floor furnace, reasonably acceptable performance of the device can be expected. With proper attention to the selection of well-constructed furnaces and their connection to vents or chimneys with due regard to condensation in the breeching, an acceptable performance can be obtained with floor furnace installations.

QUICK HEAT UP



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21—Barnes Gas fired floor furnace; 47M BTU
4—Hook & Ackerman hot water boilers, No. 2HW5
1—Nordenson Conversion Burner No. I-H6
1—Low Blast Conversion Burner, No. 240M BTU
75—Barber Conversion Burners, assorted sizes
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60—1" Gas Regulators Ass't, Pitts. Detroit Fisher
90—¾" Gas Regulators Ass't, Pitts. Detroit Fisher
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1,000—¼" I P S x 1¼" S A E ells
1,500—¼" S A E short Nuts
300—4¼" I.D. x 4½" O.D. blast tubes, 8"—11"—15"

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SINCE 1929

DEGREE DAY TABLES

ONE MONTH ONLY					SEASON TO DATE			
	December		Percent		(Sept. 1 to Dec. 31)			Percent
Normal	1948	1949	Change*		Normal	1948	1949	Change*
1139	1012	1009	— 11.4	Albany	2421	2048	2397	— 1.0
640	751	592	— 7.5	Atlanta	1175	1208	1073	— 8.7
852	751	728	— 14.6	Baltimore	1647	1407	1368	— 17.0
1000	892	872	— 12.8	Boston	2087	1770	1851	— 11.3
1102	1012	983	— 10.8	Buffalo	2384	2119	2273	— 4.7
1108	1004	962	— 13.2	Chicago	2235	1968	2109	— 5.6
953	783	743	— 22.0	Cincinnati	1892	1577	1511	— 20.1
1040	917	883	— 15.1	Cleveland	2174	1921	1918	— 11.8
571	447	459	— 19.6	Dallas	944	832	779	— 17.5
1012	1111	923	— 8.8	Denver	2272	2313	1875	— 17.5
1200	1138	1118	— 6.8	Des Moines	2424	2248	2230	— 8.0
1120	1032	993	— 11.3	Detroit	2369	2148	2227	— 6.0
1129	1058	994	— 12.0	Grand Rapids	2456	2181	2260	— 8.0
1052	1019	1020	— 3.1	Hartford	2217	2070	2137	— 3.6
1245	1619	1395	+ 12.0	Helena	3074	3459	3241	+ 5.4
331	214	239	— 27.8	Houston	520	389	392	— 24.6
1026	906	840	— 18.1	Indianapolis	2053	1868	1785	— 13.0
986	907	866	— 12.2	Kansas City	1877	1721	1599	— 14.8
225	367	294	+ 30.7	Los Angeles	383	510	414	+ 8.0
875	749	726	— 17.0	Louisville	1677	1479	1503	— 10.4
1198	1138	1142	— 4.7	Milwaukee	2515	2297	2456	— 2.4
1415	1403	1384	— 2.2	Minneapolis	3005	2787	2807	— 6.6
305	193	223	— 26.9	New Orleans	475	392	575	+ 21.0
934	816	767	— 17.9	New York	1859	1505	1495	— 19.6
1163	1161	1088	— 6.5	Omaha	2310	2291	2236	— 3.2
884	800	753	— 14.8	Philadelphia	1699	1465	1458	— 14.2
979	859	841	— 14.1	Pittsburgh	2028	1779	1774	— 12.5
1172	1006	1012	— 13.7	Portland, Me.	2602	2174	2532	— 2.7
729	795	694	— 4.8	Portland, Ore.	1676	1816	1554	— 7.3
1015	884	867	— 14.6	Providence	2157	1761	1842	— 14.6
917	815	741	— 19.2	St. Louis	1729	1573	1466	— 15.2
1040	1130	1002	— 3.7	Salt Lake City	2224	2344	2049	— 7.9
426	534	448	+ 5.2	San Francisco	930	1102	933	+ 0.3
1373	1301	1329	— 3.2	Sault Ste. Marie	3233	2943	3241	+ 0.2
708	808	722	+ 2.0	Seattle	1812	1980	1723	— 4.9
1090	994	987	— 9.5	Toledo	2278	2123	2208	— 3.0
870	758	718	— 17.5	Washington	1725	1457	1391	— 19.4

*Compared with normal. Note: Above figures secured from Monthly Meteorological Summaries published by U. S. Weather Bureau offices in individual cities.